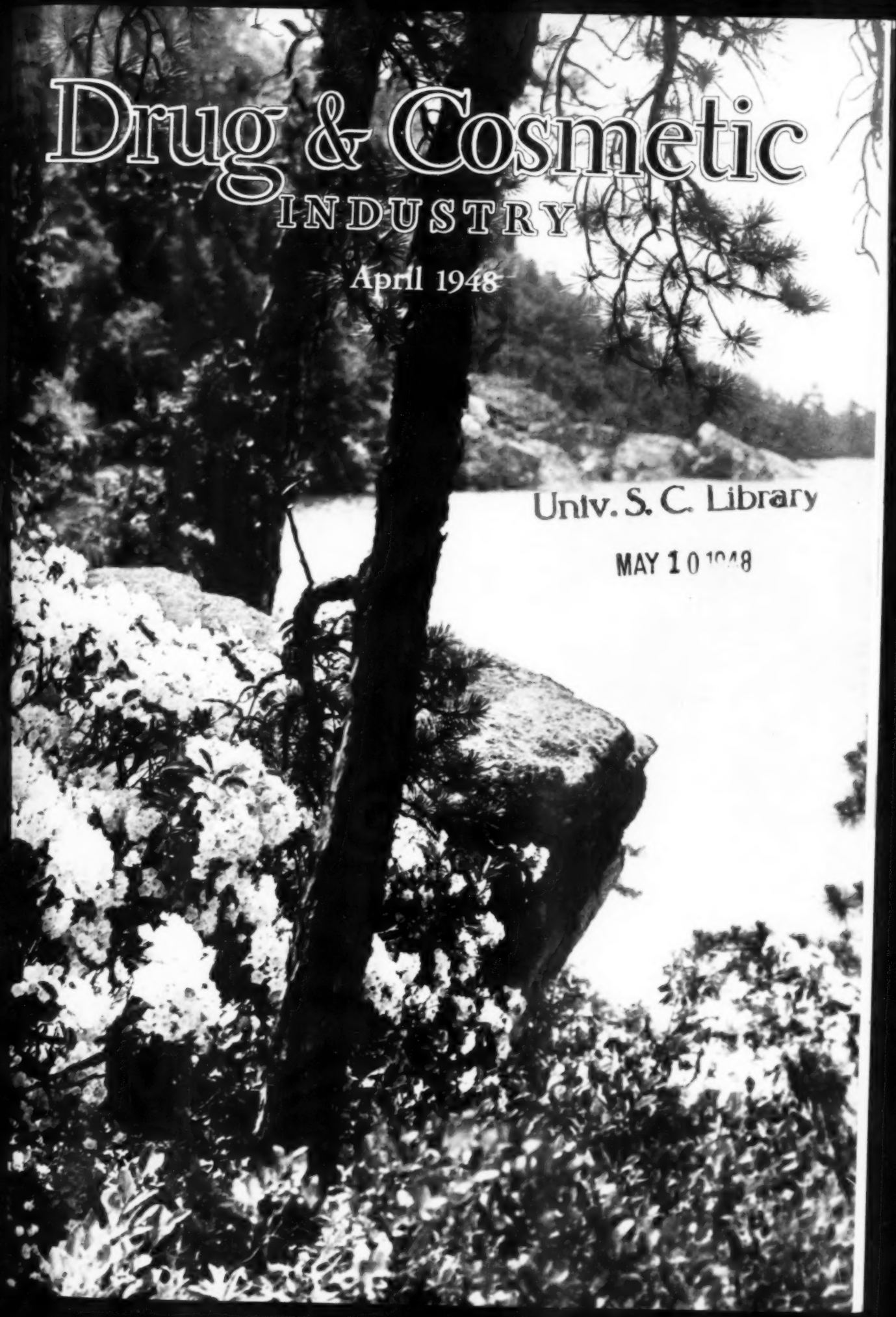
Drug & Cosmetic INDUSTRY

April 1948



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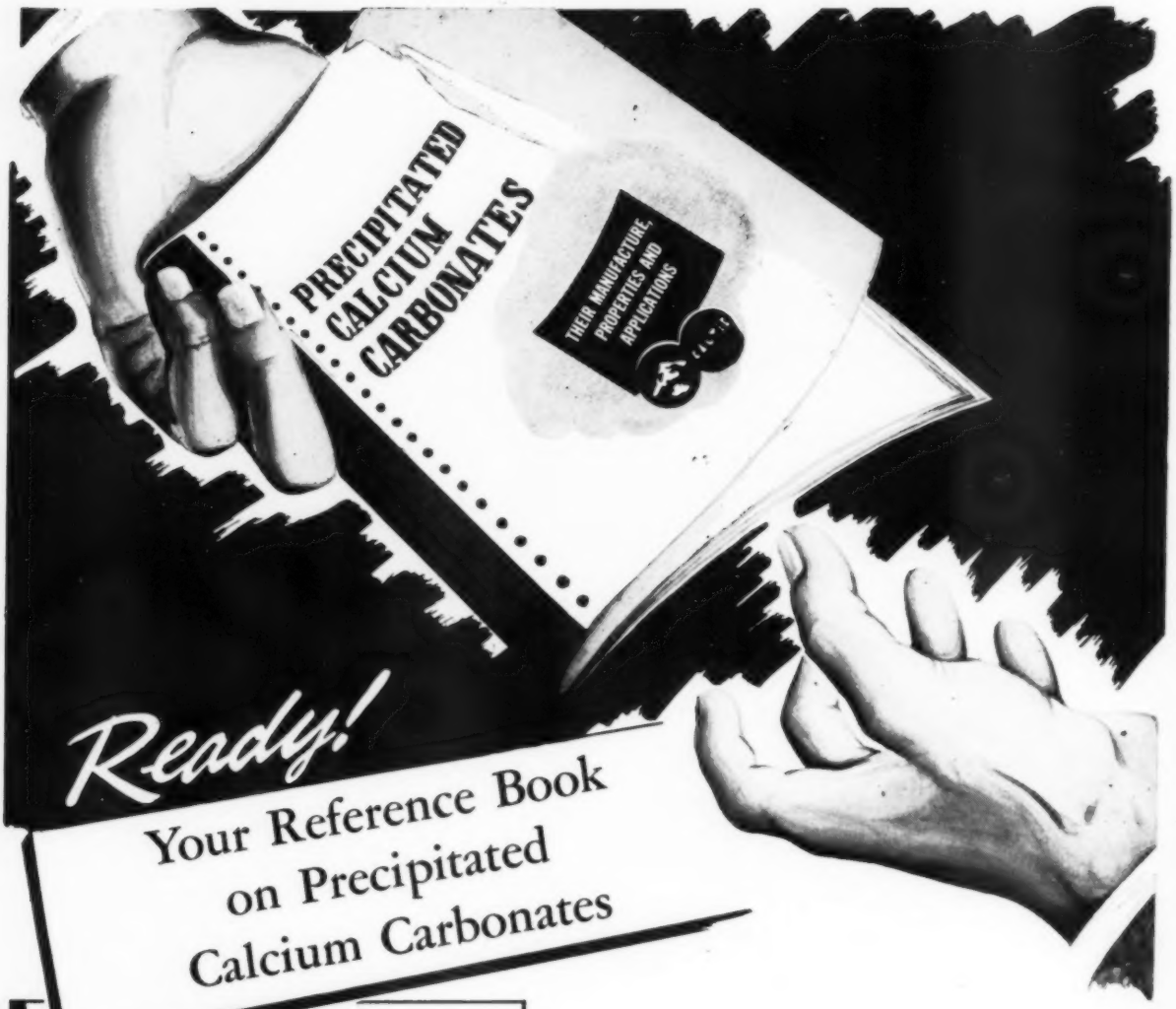

Ready!

Your Reference Book on Precipitated Calcium Carbonates

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Send today for your free copy of this de luxe 44-page reference manual on the history, properties, test methods and application of SNOW TOP U.S.P. and CALTEC (technical) Precipitated Calcium Carbonates. It contains up-to-the-minute data on precipitated calcium carbonates conveniently arranged with explanatory charts and tables for ready reference.

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Drug & Cosmetic INDUSTRY

APRIL 1948

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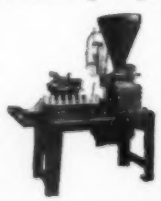
YEARS AND YEARS OF *Experience*

For half a century, and more, consumers and manufacturers, alike, have been buying and liking *New England* Collapsible Tubes. Today's great grandfathers started buying toothpaste in our tubes when they were young; the modern young generation of now-a-day buys SEAFORTH Shave Cream and many another nationally known product in streamlined New England *"Sheffield Process"* Collapsible Tubes. Our many years of experience and progress in the making of better Tubes brings you a know-how that is invaluable. Our craftsmanship has been developed to a high degree of perfection, assuring fine uniform quality, outstanding sturdiness of tube metal thru an exclusive method of melting, mixing and tempering raw metals, and, crisp and clean tube decoration. We can even fill your bulk product, as illustrated at the right, if your tube filling facilities are inadequate. Discuss your tube packaging problems with one of our trained field men . . phone, or write, *now.*



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"She doesn't love me any more since she works for Schiaparelli."

KEEPING POSTED

Parke, Davis Expands

PARKE, Davis & Company during 1947 reached the peak sales volume of $75,345,373. This was a 12 per cent sales increase over the previous year. Net profits, the second largest in the history of the company, dropped to $10,410,174, a decrease of about 22 per cent, for the peak year of 1946.

This drop in net profits in the face of expanding sales is attributed chiefly to higher costs for materials and labor, increased selling expenses and inventory.

The research activities of the company expanded during this year. The new laboratory for research development and manufacture in the important and growing field of antibiotics is fast nearing completion, and it is expected that manufacturing operations in this new laboratory will be commenced by early fall of this year. Important projects of special interest during the year have been a search for new and better drugs in the treatment of malaria, leprosy and other tropical diseases, tuberculosis, hypertension, allergies, cancer, epilepsy and vascular disorders.

Many improvements have been made in streamlining the manufacturing and packaging of over 1,600 different products. Most improvements in the field of electronics are being utilized to improve quality through better control. Twenty-five new products were made commercially available during this year. In three cities, Los Angeles, St. Louis and Denver, new buildings are being erected, for offices and warehouses. In four other cities, that is Dallas, Baltimore, San Francisco and Philadelphia, the company is moving into larger quarters.

Abbott Increases

ABBOTT Laboratories in 1947 faced the same difficulties of rising costs that have been reported in other annual statements by companies in the trade. However, a lower profit per unit of sales was offset by a large increase in unit and dollar sales and this provided a total net profit of over $10,200,000. Net sales for the company during 1947 were $59,621,174.85. The cost of products sold was $22,888,924.77; the selling, administrative and general expenses amounted to $18,964,425.05.

Abbott is nearing completion in the two-year building program which includes extensions to the administrative building and construction of new facilities and laboratories and control buildings. Two new branches in Toledo and Denver bring the total company branches to 18 in the United States. The new Canadian branch has been completed and is operating, and the company is now doing business in 117 countries.

During this year 61 new products were introduced. The report estimates the total annual sale of penicillin at $100,000,000. This represents 20 tons of pure crystalline material and requires 100,000 tons of intermediates, principally corn products, in its production.

Enlightened

THE chemical industry has an admirable record of reducing prices as volume permits them to make technical changes in the cost of production. There are many historic examples of new chemical products, essential for health or industry, that were first introduced in small quantities at high prices, but which later had a history of consistent price reduction until that product became universally available at very moderate prices.

An interesting example of this in the transition stages is the recent reduction by Dow Chemical Company in the prices of di-tryptophan and di-methionine.

Di-tryptophan was introduced by Dow five years ago at $300.00 a pound. Last December the price was $113.00 a pound. The present reduction has brought the price of this product down to around $85.00 a pound.

Another example may be found in Merck's 7th cut in the price of streptomycin from $3.50 a gram to $2.75 a gram. Streptomycin was introduced two years ago at $25.00 a gram.

The Recorded Detailman

AN EXCITING new sales promotion and the answer to the prayer for "one minute more" by doctors and promoters alike, has evolved in the form of The Recorded Detailman, a three minute record for the busy physician to play on his own phonograph, and his own time. Nordine Laboratories, Inc. are the originators and distributors of this innovation, advertising their multivalent digestive enzyme, Enzypan. An attractive little gift to the doctor is introduced on the other side of the disc; a three minute recording of Rachmaninoff's Concerto Number 2, in C Minor.

Independent Merchants Act

ONE more regulation for distribution has recently been proposed in a bill introduced by Senator Murray of Montana. Called the "Independent Merchants Act," the bill seeks to establish a ceiling price for maximum quantity. Once this maximum quantity is reached a seller may not reduce the price, even though a buyer purchases at one time several times the maximum quantity.

Defining "maximum quantity" this would be the largest quantity normally sold and delivered at one time and in one place, except that the Federal Trade Commission may limit the amount on its own motion or on partition from an affected industry."

This bill bears such a direct relation to the current action of the Federal Trade Commission on quantity discounts of automobile and truck tires, it would seem that there is a great deal of interest from several quarters in Washington to set a rigid limit on a manufacturer's ability to pass on any reduced costs secured from volume production or from volume control in shipping.

Australia to Export Penicillin

AUSTRALIA not only is able to supply penicillin for all local requirements of the Southwest Pacific area, but will soon be in a position to export the drug to areas where profits might be realized.

Samples Wasted

MOST of the money spent by the drug manufacturers on doctors' samples, and on direct mail to doctors, is identified with a department commonly known as "water over the dam." Few of the samples are used by physicians, who argue in their own defense that the samples are not generous enough to insure them a fair trial. Much of the advertising literature, which is most generous, finds a direct route to the waste basket. Sad to say, the production costs of these samples and booklets are tremendous, and the results far from satisfactory. In the frank opinion expressed by Dr. Norman Jolliffe before The American Pharmaceutical Manufacturers' Association at the recent meeting of their Eastern Section, it would be wise for manufacturers to distribute samples only on the doctors' requests.

Interesting Figures

THE recent annual report of Westinghouse Electric gives some very interesting figures. In a detailed tabular analysis of the business it shows that the net worth per share of common stock has increased from $19.82 to $24.01 during the last twenty years.

In this period the dividend per common share has increased from 75 cents to $1.25. Now comes an interesting comparison. In this period taxes per employee have increased from $83.38 in 1928 to $656.99 in 1947. Also during this period taxes per share of common stock increased from 39 cents to $5.15.

For whom has Westinghouse really been working during the last 20 years? Look again at the figures.

It Takes A Woman

MANY people believe that in our system of representative government our representatives in Washington and in the state legislatures are overloaded with lawyers. This may give us representation by states and districts, but it does not give us representation by class or economic interests.

Two years ago Nassau Republicans elected Genesta Strong to the New York State Assembly. Mrs. Strong, in addition to her responsibilities in representing Nassau County, has kept an open eye for the inequities affecting the women in her state. She has just discovered that under New York State law a woman must be licensed to give herself a facial, shampoo or a home permanent, or to help her daughter or a friend in any of these ways. Because of this, she has just introduced an amendment so that this law will not affect or apply to non-compensative home hairdressing.

No Bull, This!

A NINE year old Friesian cow named Bridge Birch of Moortown Farm, Hampshire, England, produced 45,081 pounds of milk in the boscal year ending March first, outstripping the world's record by nearly 4,000 pounds. It's a lot of milk even if she didn't, but we are lead to believe that her "loosening up" was induced by a diet of stout, and aspirin (no particular brand name). Temperance leaders, afraid that Bridge Birch might mother a brood of bovine alcoholics, begged the owner to knock off the stout, gradually. The question is, can she give on aspirin alone.

Whaling Note

BECAUSE of the enormous purchasing power of American Soap Companies, this country is the largest buyer of whale oil. Recently a single Norwegian whaler arrived in port here with a $5,000,000 cargo of sperm oil.

Ambergris, according to the Norwegian captain, is no longer a treasure hunt for the whaler. On this trip the total catch was 100 pounds of ambergris.

Change of Habitat

SOME day we may be hearing about Puerto Rico vanilla. The State College of Agriculture at Cornell has succeeded in germinating a vanilla seed and is shipping to Puerto Rico more than 100 seedlings of vanilla hybrids. It is hoped that the Federal Experimental Agricultural Station in Puerto Rico may be able to develop a hybrid which will be successful in this island where the warm, moist climate apparently gives favorable conditions for growth.

The ten million dollar industry which Mexico has built around the vanilla bean rests not only in the fact that this member of the orchid family has found the most hospitable conditions of climate, moisture, temperature and soil, but also in the fact that over a period of some generations the Mexicans have developed to a high degree a peasant craft in the cultivation and hand pollination of this delicate plant and in the harvesting at the precise time and the proper curing of the bean.

Even if Cornell, in cooperation with the Agricultural Experimental Station in Puerto Rico, has succeeded in developing a variety or species which will grow in this island, they still have some years of tedious organization before they acquire the skill so necessary in cultivation and curing the vanilla bean. Even if this admirable objective is finally achieved, it will be extremely interesting to the trade to observe the flavor and aroma of a Puerto Rican vanilla bean.

From our experience in observing the flavor and aroma of plant materials, we would guess that if Puerto Rico finally becomes successful in the establishment of a vanilla bean industry that it will probably not conflict with the delicate and distinguished aroma of the Mexican bean, but will contribute a vanilla flavor that for good or bad will be distinctive to the Puerto Rican soil.

Color Promotion

COLOR scientists say that there are over ten million colors and shades. This means that the manufacturers of nail enamel still have room for a few more promotions.

Foreign Trade Increases

OVERSEAS sales of United States drugs and pharmaceuticals exceeded 177 million dollars in 1947 in contrast to approximately 145 million dollars in the preceding year, according to Thomas W. Delahanty, chief of the Health Products Section of the Office of International Trade. Mr. Delahanty pointed out that 1947 sales were ten times greater than the peak prewar year of 1938. Druggist preparations (nonproprietary) continued as the leading group, the next in popularity being medical chemicals. In close proximity was the demand for antibiotics. Vitamin sales have remained relatively stationary. Mr. Delahanty indicated that there has been an improvement in shipments of biologicals and galenicals, and a small decline in sulpha drugs. There is every reason to believe that in 1948 United States producers of drugs and pharmaceuticals can acquire an overseas demand for their products in excess of 200 million dollars.

Patent Office Back-Log

THE present jam in the United States Patent Office is becoming seriously disturbing to many people in this country. It is highly possible that the tremendous back-log of patent applications and the long delay of two years or more following patent application are slowing down research or the introduction of new manufacturing methods and products.

The latest reports from the Patent Office show that 145,000 patent applications are awaiting action as against 62,000 in 1945. During this same period the back-log of trade-mark applications has grown from 2,600 to 27,000.

Commissioner Kingsland has estimated that by the end of June the total back-log of all cases should reach a record of 208,000.

The trouble is that there doesn't look like much of an opportunity for relief in this situation for quite a long time. It takes about two years to train examiners. The Patent Office with hardly any larger appropriation than for the previous year can give very little encouragement for even expediting the examination of this accumulating mountain of applications.

Just an Idea

THE United States Navy is selling a manual which contains a number of formulas used to solve the vibration problems most frequently encountered by physicists and marine engineers.

How about a manual with some formulas that would help solve the business jitters of the business man.

What's The Matter With Cosmetics?

THERE has been a great deal of Congressional activity in regard to the excise taxes, but according to a detailed report in the Wall Street Journal, this activity in Congress has not included anything to do with cosmetics.

Representative Doughton has been interested in a repeal or reduction of the 3 per cent tax on freight bills and on the 10 per cent to 25 per cent taxes on telephone calls, on radiograms and on telegrams.

Representative Lynch has objected to the 20 per cent tax on admissions, and Representative Dingel has opposed the taxes on oleomargarine. Other activities in Congress has been an effort by Representative Grant to remove the 7 per cent tax on house trailers, and last year Representative Dingle got the House to vote to remove the 20 per cent tax on retail jewelry costing under $25.00. This was an amendment to the bill granting tax exemption to commercial photographic equipment and musical instruments purchased by schools and churches.

Representative Knutson from Minnesota is trying to cut the 20 per cent tax on furs and has talked about cutting the 20 per cent tax on movies and the 25 per cent levy on telegrams.

This seems like a lot of activity and probably does not include all of this support for excise taxes that has come from Congressmen. But we are interested to note the absence of any friend of the cosmetic business in this article. We know that there has been some hard spade work done by certain members of the cosmetic business, but we would certainly like to see this spread out over the United States, where through local state effort it might register more forcibly on some sympathetic Congressmen or Senators.

Art

THE pharmaceutical industry has always been appreciative of art and has supported it whenever possible. The history of pharmacy can be depicted through many famous and interesting pictures. In the last several years three leading pharmaceutical manufacturers have become patrons of art and have collected or sponsored paintings that will become part of America's art heritage.

This industry has its modernistic schools, too. That relatively new field of art, the recording in color painting of the human interior as observed at the time of a surgical operation, has not gained the attention it deserves. Perhaps the most brilliant and vivid color harmonies ever captured by an artist and recorded on canvas or paper can be found here. One recent painting of an intestine with adhesions has a sensitiveness in color selection and so perfect a mastery of composition that it deserves wide acclaim as a work of art.

Another recent painting of a bladder arrangement would delight the new school of interior decorators and would make a perfect component of the new-look room with modernistic furniture.

Still another new school of modern art is developing which this industry can claim all its own. Its leader, orginator and at present, sole exponent, is Dr. George Valley, assistant director of research at Bristol Laboratories in Syracuse, New York. Dr. Valley's art is so original in its conception that in our opinion he puts Salvadore Dali, by comparison, in the class of a cigar band designer.

A beautiful color page in a recent issue of the American magazine shows samples of Dr. Valley's art. This art is a picture formed by coaping stained microbes into various formations. An authentic color picture of the American flag is presented here. Other creations are said to be a Christmas card consisting of a bacteria wreath of holly and a Valentine greeting comprising a heart full of microbes. Another recent creation is a beautiful butterfly.

No one can say that this hobby of Dr. Valley lacks culture. But it will probably be difficult to lift it out of the field of scientific entertainment. However, if Dr. Valley ever goes in for portraiture, we would like to make a suggestion.

FDA Acts On Mineral Oil

THE Food and Drug Administration will regard as misbranded any drug for oral administration containing mineral oil and labeled to encourage its use in pregnancy or for the consumption of infants.

Luxuries Feel the Squeeze

FEDERAL Excise Tax Reports are indicating that luxuries are feeling the squeeze.

Reports of tax receipts of the first eight-month period of last year show that fur sales were hardest hit of all with a drop of 20.4 per cent from the same period a year ago.

Collections on domestically distilled spirits show a 18.5 per cent decline; on jewelry, 10.4 per cent; on luggage, 7.8 per cent and cosmetics, 7.0 per cent.

Industry Aid Program

JOHNS Hopkins has announced a new and different method for assisting organizations in the drug, chemical and allied trades industry in their research. This program is designed to provide facilities for all types of research on the products of these industries. In return for this work, the Johns Hopkins University Medical School will depend upon member concerns for financial assistance. Dr. Perrin H. Long is chairman of the committee which will govern this new organization and which is supported by a group of prominent John Hopkins alumni.

The fund is to be known as "The Fluid Fund for Education and Research in the Fields of Chemistry, Physics, and Medicine." Details of its operation are to be worked out with each individual contributor.

Hopkins is one of the few medical schools in the country which is operated under a "full-time" system. Its department heads, about half of its associate and assistant professors, as well as many of its instructors and assistants, devote their entire time to teaching and research, and, in the clinical departments, to the care of patients in the hospital. Their men receive no income from private practice. The nation's industrial situation being what it is, the men at Hopkins feel that they must make an arrangement, which the fund symbolizes, with the industry.

It is stated that the money thus gained will permit Johns Hopkins to make the needed contributions toward the solution of the problems facing the drug and medical supply industry today. All reputable conerns in the drug, chemical and allied industries have been asked to participate in this program.

Monsanto Restores Plant

THE Monsanto Chemical plant in Texas City, destroyed last April by a ship explosion in the harbor, is expected to be restored to operations by June. The first unit, the ethylene plant, is in running order now. The company has invested $40,000,000 in new plants during the past year.

Baldness and Brains

FOR WHAT it might be worth, hair preparation manufacturers who read Dr. Armattoe's report on baldness, might get an idea of where to slant their sales campaigns.

In delivering a paper before the American Association of Physical Anthropologists, Dr. Armattoe, of Lomeshire Research Center, Londonderry, Northern Ireland, pointed out that premature baldness is high among male intellectuals in Great Britain, Sweden and Switzerland. On the other hand, premature baldness is rare in France, "the percentage falling in Picardy and the Paris region to as low as 5 per cent."

As to what brains and culture have to do with lack of hair—or too much of it—Dr. Armattoe said, "On the whole it is true to say that educated young men get baldheaded sooner than uneducated ones. We are convinced, however, that too much brain work in itself has nothing to do with the condition."

We have no report on the condition of Dr. Armattoe's hair. But are sure that everyone after reading this item will hurry to the washroom mirror and check the latest reading of the hairline to see where they stand intellectually.

SALLY, THE HAT CHECK, GOES SHOPPING

What's happened to Rose?

THE SUN still shines in the lovely Valley of Roses. But it can bring little gladness to the hearts of the people who live there.

Behind the grim shadow of the Iron Curtain Bulgarians still plant and cultivate the Rose. In the primitive copper alembic of the peasant, in the steam still of a family enterprise, with the solvent process developed by a few enterprising business men, Otto of Rose is still being produced.

But the fruits of their labor are not for these Bulgarian producers—that is, those who are left. They cannot exchange their Otto of Rose where they will, or for the things they want. Those who use Otto of Rose, in the world market, must turn to Russia.

The suave Bulgarians, some of whom made annual pilgrimages to this country, are heard of no more. This late spring will bring no Shipkoffs, no Pappazoglu, no heirs to the famous Bagaroff, Bontcheff or Batzouroff. There will be no visitors from this fragrant valley to brighten our business lives with the nostalgia of this ancient floral industry.

Instead we have the precision machinery of a trading office—"Yes, Yes—how much do you want—the price is so and so—delivery as and when."

No, Otto of Rose, once the queen of perfumery, for long the leading lady of the florals, revered by royalty, is not what it used to be.

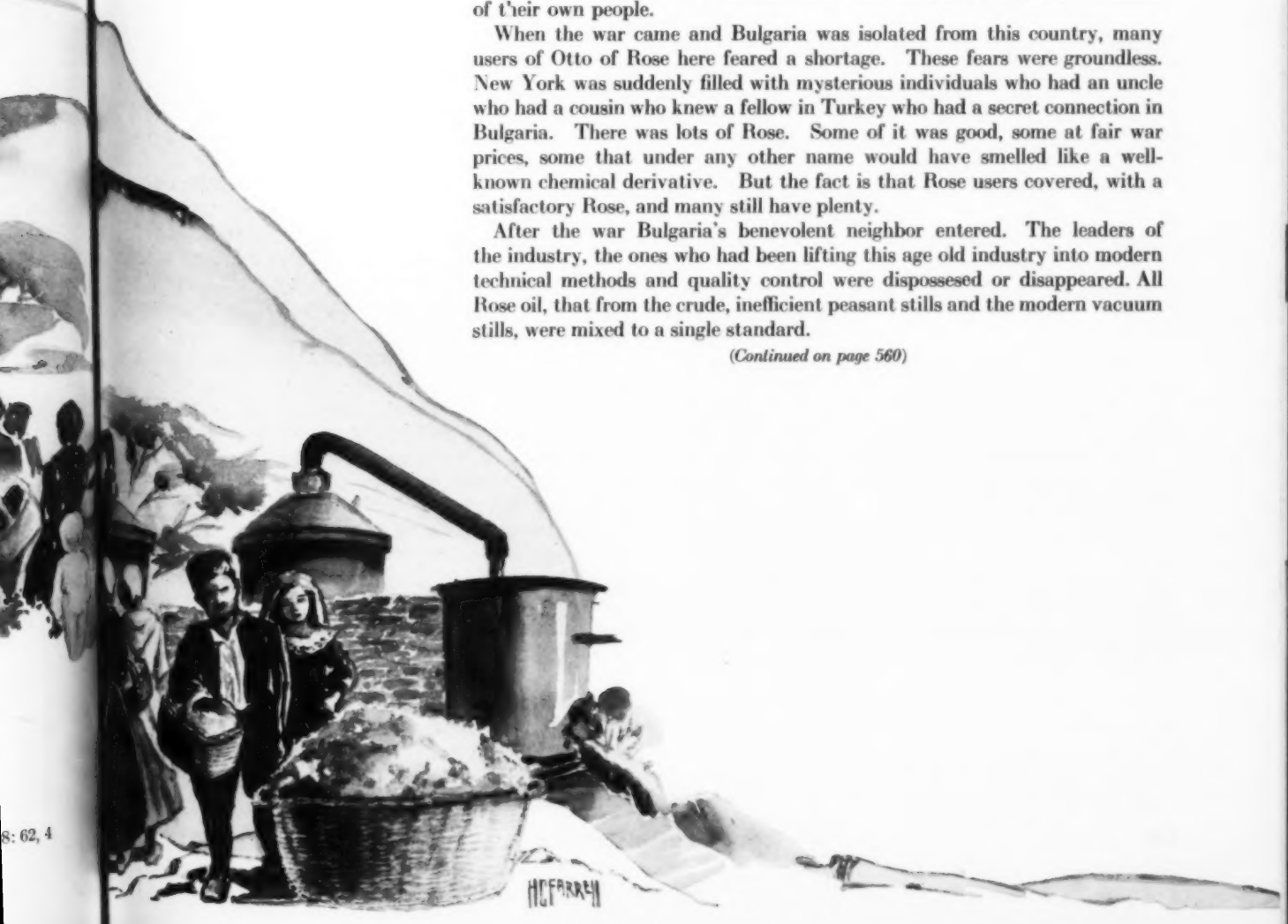
As far back as 1935 the Bulgarians were having trouble. This was a mild kind of trouble, something like the little pigs that we were plowing under about this time. There was too much Rose for the world market.

The Bulgarian government moved in to fix the price of roses and rose oil. They controlled production and sales. Rose gardens were uprooted by government decree, and each rose grower was given the limit of the flowers he could sell. It was a bad, confusing time for the Bulgarians. They were being pushed around. But at least they were being pushed by a government of their own people.

When the war came and Bulgaria was isolated from this country, many users of Otto of Rose here feared a shortage. These fears were groundless. New York was suddenly filled with mysterious individuals who had an uncle who had a cousin who knew a fellow in Turkey who had a secret connection in Bulgaria. There was lots of Rose. Some of it was good, some at fair war prices, some that under any other name would have smelled like a well-known chemical derivative. But the fact is that Rose users covered, with a satisfactory Rose, and many still have plenty.

After the war Bulgaria's benevolent neighbor entered. The leaders of the industry, the ones who had been lifting this age old industry into modern technical methods and quality control were dispossesed or disappeared. All Rose oil, that from the crude, inefficient peasant stills and the modern vacuum stills, were mixed to a single standard.

(Continued on page 560)



MOLECULAR DISTILLATION Part I

By MORRIS B. JACOBS, Ph.D.

About three decades ago the technique of short-path, thin-film, or molecular distillation for the separation of various materials was introduced. Within the past decade it has been applied commercially for the separation and purification of a number of materials which are utilized by the drug and cosmetic industries. To paraphrase the words of Kenneth C. D. Hickman, a pioneer in the development and utilization of molecular distillation; one can point out that the molecular still grew up in the service of the fat-soluble vitamin industry but while early models could be used profitably for the removal of vitamin A esters from high potency marine oils, present day machines do not need the premium of vitamin extraction to process certain products profitably.

Molecular distillation was first applied to the separation of mercury isotopes and then for the concentration of vitamins from marine oils by separation from undesirable fatty and oily matter. Its usefulness has been greatly expanded and now it is used for the separation of sterols such as cholesterol, sitosterol, stigmasterol; for the distillation of vitamins, for example the recovery of vitamin A esters from fish liver fat, the distillation of tocopherols from soy bean oil, the purification of natural vitamin D's; the reclamation of industrial residues; the separation of mineral oils; and as an analytical and research tool. It is clear that many of these products are utilized by the drug and cosmetic industries. Undoubtedly there will be increasing use of this method for the purification and separation of other materials as the process itself becomes more commonly applied and as the equipment most of which is concentrated in Rochester, New York (Distillation Products, Inc.) becomes available.

Definition

Hickman has pointed out that molecular distillation is a term which has been applied loosely although its real meaning should be restricted. In its proper meaning it is applied to a distillation between a parallel evaporator and condenser, the gap between the two being held under high vacuum.

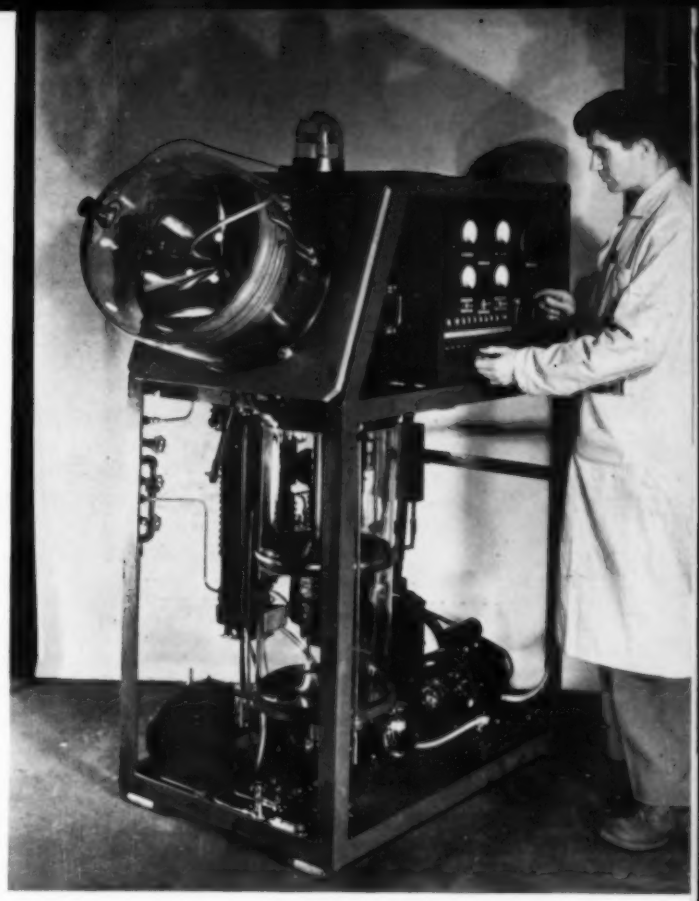
In the literature, however, a much broader meaning has been applied and almost any kind of a distillation apparatus is termed a molecular still if the operating pressure is believed to be less than 0.001 mm. Hg. It is to be noted in addition that such quoted operating pressures are not those made at the site of the distillation but are theoretical pressures which the pump of the apparatus can achieve under ideal operating conditions when the apparatus is empty.

Basic Principles

To understand the operation of a short-path or molecular still, it is necessary to refresh our memories concerning the movement of molecules in the gaseous state. At conditions which are known as standard temperature and pressure, namely O deg. C. (32 deg. F.) and 760 mm. Hg (1 atmosphere pressure) there are 2.7×10^{19} molecules in a cubic centimeter of gas (Loschmidt's number. These molecules are relatively crowded together so that they are continually colliding with one another and seldom travel a straight path for any considerable distance. In between collisions, they do travel in a straight path and the average distance molecules travel between encounters is termed the *mean free path, l.* It has been shown that the mean free path can be calculated from the pressure, the molecular weight, and the viscosity of the gas, the gas constant R, and the absolute temperature.

For the purposes of this discussion it will be adequate to note that the mean free path is inversely proportional to the pressure, hence at very low pressures the distance travelled by molecules between collisions will be of the order of the dimensions of the equipment or apparatus. For instance in oxygen at O deg. C. (32 deg. F.) and 0.01 mm. Hg pressure, the mean free path is about 1 cm., whereas for oxygen at standard temperature and pressure, the mean free path is 6.3×10^{-6} cm.

In molecular distillation the pressures are kept so low that a molecule leaving the surface of the material being distilled, that is the distilland, travels to the condensing surface without colliding with other molecules because the distance it travels is relatively short and the number of other molecules present are relatively few. Because the material being distilled is condensed almost immediately after it leaves the surface from which it is being evaporated, the frictional pressure drop through the equipment is negligible and in consequence operations can be maintained at much lower pressures. In addition the temperature of distillation can be kept at a minimum. This in turn implies that the thermal hazard of molecular distillations is very likely less than that of any other method of distillation.



Commercial model, laboratory falling film still. Photo Courtesy Distillation Products, Inc.

Boiling Point

The normal boiling point of a liquid is defined as the temperature at which the vapor pressure of a substance is equal to the standard atmospheric pressure, that is, 760 mm. Hg. At lower than atmospheric pressures, liquids will boil at lower temperatures. Distillation in general is the operation by which components of a mixture may be separated by virtue of their difference in vapor pressure at various temperatures. In ordinary distillations the sharpness of separation can be controlled by use of fractionating columns and by drawing off selected portions of the distillate according to a temperature range.

In molecular distillations, however, true boiling does not occur, and therefore there is no boiling point in the ordinary sense. There is also no sharp separation. The molecules take off from the surface of the material being heated and travel in a straight path. Those molecules having a mean free path equal to the distance from the evaporating surface to the condensing surface are able to complete the jump. Those having shorter mean free paths collide with each other and do not get far from the evaporating surface. Because of this difference the separations in molecular distillations are effected.

Under given conditions of pressure, a particular molecular species will have the mean free path required to permit its passage from the evaporating surface to the condensing surface over a narrow but measurable temperature range. The quantity of the material collected as the distillate over this and other temperature ranges takes the form of a probability distribution curve, when the per cent of yield is plotted against the temperature increase. Most of these curves possess a sharply defined maximum along the temperature axis. This peak can be taken as a substitute for the boiling point.

Tracer Dyes

The design of the equipment used has been found to affect the pseudo-boiling point, so that different investigators have found that the same materials will distill at different temperatures even under the same pressure conditions.

In order to overcome this difficulty so that the results of different investigators could be compared and the directions for a given operation could be standardized, certain dyes are placed in the oils being distilled. These dyes have the property of coming over under the same conditions as the material desired. Even though the conditions are varied considerably, the tracer dyes will always pass over at the same time as the molecules of the component they are being used to identify. By this means correlations between temperatures and pressures with different equipment can be obtained. This method can even be used when more than one component is affected by the indicator dye for a complex curve is produced and by the degree of departure from the standard curve the difference in the psuedo-boiling points of the components may possibly be ascertained.

Still Types

The principal molecular still types are the falling-film apparatus and the centrifugal types of apparatus. The former consist of a vertical tube containing heating element down the exterior of which the liquid being distilled is permitted to flow. The molecules vaporize on the surface of the tube and condense on a surface concentric with the heating tube at about a distance of one inch. In the centrifugal type, the distillant spread out in a thin layer on a rotating heated disk or cone, evaporates and is condensed on another disk or cone or analogous device. These stills and their variations will be described and discussed in a succeeding article.

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PER CAPITA PURCHASES PERFUMES and COSMETICS

Per Capita Purchases By Territory & State

Region	*Purchases*	*Total Population*	*Female White Population*	*Total Per Capita Purchases*	*Female White Per Capita Purchases*
New England	$21,016,553	$9,327,000		$2.25	
Maine	1,559,237	911,000	420,216	1.71	$3.17
New Hampshire	821,567	547,000	246,381	1.50	3.33
Vermont	449,276	364,000	176,831	1.23	2.54
Massachusetts	12,091,231	4,725,000	2,185,081	2.56	5.50
Rhode Island	1,746,454	761,000	358,161	2.29	4.87
Connecticut	4,348,788	2,020,000	842,097	2.15	5.16
Middle Atlantic	$136,277,400	28,809,000		4.73	
New York	102,513,605	14,092,000	6,471,354	7.27	15.84
New Jersey	7,927,181	4,435,000	1,937,382	1.79	4.01
Pennsylvania	25,836,614	10,281,000	4,708,506	2.51	5.48
South Atlantic	44,488,415	19,499,000		2.28	
Delaware	678,508	293,000	114,722	2.32	5.91
Maryland	5,449,139	2,215,000	755,680	2.46	7.21
Dist. of Columbia	6,006,872	861,000	246,578	6.98	24.40
Virginia	6,284,721	3,019,000	997,464	2.08	2.29
West Virginia	3,371,430	1,849,000	876,196	1.82	3.84
North Carolina	5,996,540	3,718,000	1,285,873	1.61	4.66
South Carolina	2,456,043	1,918,000	543,711	1.28	4.51
Georgia	7,776,039	3,233,000	1,021,590	2.41	7.61
Florida	6,469,123	2,394,000	692,416	2.70	9.32
East North Central	103,755,088	29,382,000		3.53	
Ohio	24,575,492	7,773,000	3,275,451	3.16	7.50
Indiana	9,045,332	3,858,000	1,640,617	2.34	5.51
Illinois	40,891,558	8,221,000	3,737,499	4.97	10.93
Michigan	23,391,302	6,249,000	2,455,184	3.74	9.52
Wisconsin	5,851,404	3,283,000	1,525,559	1.78	3.83
East South Central	17,374,458	10,771,000		1.61	
Kentuckey	3,370,072	2,777,000	1,301,800	1.21	2.58
Tennessee	7,280,624	3,079,000	1,207,326	2.36	6.03
Alabama	4,294,262	2,824,000	922,101	1.52	4.65
Mississippi	2,429,500	2,092,000	550,170	1.16	4.41
West North Central	39,329,751	13,688,000		2.87	
Minnesota	8,192,018	2,897,000	1,353,813	2.83	6.05
Iowa	4,995,920	2,606,000	1,239,188	1.91	3.99
Missouri	16,452,103	3,854,000	1,778,248	4.27	9.26
North Dakota	1,058,468	552,000	301,417	1.92	3.51
South Dakota	1,054,009	564,000	298,887	1.87	3.56
Nebraska	3,243,087	1,301,000	640,957	2.49	5.06
Kansas	4,334,146	1,914,000	861,401	2.26	5.02
West South Central	36,113,469	13,881,000		2.60	
Arkansas	2,913,729	1,903,000	721,846	1.53	4.03
Louisiana	5,377,266	2,549,000	754,360	2.11	7.12
Oklahoma	6,011,497	2,311,000	1,037,970	2.60	5.86
Texas	21,810,977	7,118,000	2,719,286	3.06	8.02
Mountain	13,997,563	4,399,000		3.18	
Montana	1,145,636	494,000	251,493	2.32	4.55
Idaho	1,874,972	488,000	245,780	3.84	7.62
Wyoming	656,172	275,000	113,815	2.39	5.76
Colorado	4,712,139	1,159,000	546,180	4.07	8.62
New Mexico	1,356,753	550,000	240,795	2.47	5.63
Arizona	1,737,469	657,000	206,834	2.64	8.40
Utah	1,875,592	637,000	268,333	2.94	2 98
Nevada	638,830	140,000	43,046	4.56	13.87
Pacific	63,496,705	13,625,000		4.66	
Washington	7,554,476	2,233,000	814,459	3.38	9.25
Oregon	5,424,295	1,517,000	521,012	3.57	10.41
California	50,517,934	9,876,000	3,262,256	5.12	15.48

In the previous issue we listed figures which showed the sale at retail of perfumes and cosmetics by months and by states. These retail sales figures were for the period of a year, including the months from June 1946 to 1947.

The figures used were derived from reports of the Collector of Internal Revenue, giving excise tax collections for perfumes and cosmetics.

It was pointed out in this article that a number of unknown factors prevented the reports of excise tax collections for perfumes and cosmetics from becoming an absolute index.

Inability to determine the time lag from the actual sale of the cosmetic in the retail store and the time this sale would appear in a Treasury report was one difficulty. A retail sale in December might not appear in January reports. Delay in credit collections or delay by small stores in reporting might well throw this into February or March reports. A close study of monthly figures convinced us that a delay to two months, that is, that February tax reports represented December sales, would be accurate with a small margin of error.

Sales by states, arrived at by multiplying excise tax collections from each state by five, is also not absolute. Mail order houses and large chains, for instance, may report from accounting headquarters in one state retail sales made in another. This would favor several states. Errors here, however, should not be as high as ten per cent.

Taxable cosmetics are a well defined field including perfumes, creams, make up preparations and excluding such mass utility toilet preparations as soap, tooth paste, shaving cream, shampoos. Manufacturers within the fairly well defined cosmetics industry should, for this reason find a profitable occupation in estimating every possible application of these excise figures for market analysis.

To carry the use of these excise reports one step further, we list here the per capita consumption of cosmetics by states. Admittedly this is not a particularly valuable contribution. It may have some value in appraising state coverage of magazines and the relative ability of any one magazine to stimulate sales. Also these state consumption figures indicated some curious and interesting variations. We would expect the District of Columbia to be well up above average in per capita use of perfumes and cosmetics but we confess surprise at finding Colorado, Nevada so high up on the list. Missouri has St. Louis and that, as a distributing center, may account for a per capita sale nearly double Kansas.

Per capita sales for female white population should narrow the total consumption of a state of perfumes and cosmetics down to a reasonable average of per capita sales.

Sales of mens toiletries are a margin of error, but these are less than 5 per cent of the sales of taxable cosmetics. Perfume and cosmetic sales to Negros are also a margin of error, perhaps a substantial one in a few states, but not statistically important in most states.

A more detailed progression of these figures would give an index which should reflect with very close accuracy the actual use of perfumes and cosmetics by the women of each state. This would be to use the state figures for the female white population in age groups between 15 and 60 years.

On this basis, with a total U. S. population of white females of 58,766,322 and a population of female whites of 38,078,760 between the ages of 15 and 60 (1940 Census) per capita consumption of perfumes and cosmetics for the U. S., using the fiscal year of June 1946 to June 1947 would be:

Female (white, all ages) $8.00.
Female (white, 15-60) $12.37.

Newer Treatment of Fungus Infections

The best known superficial fungus infection is popularly known as Athlete's foot. It is reported to affect some 75 to 90 per cent of some population groups and the adult who has never experienced it is the exception rather than the rule. The itching and peeling which characterize the mild form of this condition are annoying but usually not alarming and as a result few early cases achieve the distinction of being properly diagnosed as dermatophytosis, tinea pedis or epidermophytosis.

As a rule, the patient buys in his drug store some lotion, ointment or powder he has heard or read about. A recent article in the Journal of the American Medical Association listed 106 different proprietary athlete's foot preparations that are on the market today. Most of these contain salicylic acid, benzoic acid, thymol, phenol or some other coal tar derivative. Some contain in addition iodine or some mercury compound. All sorts of lotion and ointment vehicles are employed.

The medical literature offers abundant proof that dermatitis caused by overtreatment of athlete's foot, together with super-imposed bacterial infections and allergies are responsible for far more suffering than the original complaint. Certainly the doctor, and the dermatologist in particular, sees more cases of overtreatment than he sees of plain athlete's foot.

It would seem logical that the best way to get rid of a fungus infection is to attack it with some chemical highly effective in killing fungi. If this were true mercurials, phenolic and coal tar compounds should be the the best. The fact is that they are the very ones that cause the worst complications.

In the 1944 Year Book of Dermatology, its editor, Dr. Marion B. Sulzberger of New York, hailed the advent of fatty acid treatment of dermatophytosis as permitting relatively effective treatment with negligible irritation. In this way, said this prominent dermatologist, "the fatty acids are as superior to older forms of therapy as penicillin is to arsenicals for syphilis or to the sulfonamides for certain other infections."

Dr. Sulzberger was speaking in 1944 as one of a few who were familiar with this new method of therapy. He was impressed with the good results he had observed with these compounds during World War II. He credited Dr. Samuel M. Peck of New York with the discovery of this new therapeutic advance.

Dr. Peck has spoken many times on the background of fatty acid therapy and on one of these occasions he described these compounds as a human antibiotic. This term is extremely apt for the discovery of their medicinal value came about as the result of the study of human sweat.

The principal function of perspiration is to aid in regulating body temperature by cooling effect it produces on its evaporation. Dr. Peck discovered that sweat inhibits the growth of both bacteria and fungi. His study of human perspiration was prompted by his interest in German investigations into the acidity of the human skin.

When new scientific methods of determining slight differences in hydrogen ion concentration became available, Marchionini utilized this new technique to determine the pH of human skin in health and disease. He reported in German dermatological journals that the healthy skin was on the acid side and that this acidity helped protect the skin against infections. Others noted that the localization of ringworm between the toes coincided with a more alkaline pH in that area.

Peck appreciated that the acidity of the skin was largely determined by the sweat. He collected large quantities of sweat and analyzed it. He found that it was not merely a dilute solution of salt with a little lactic acid, but that it also contained small quantities of various fatty acids, such as propionic and caprylic acids.

By subjecting cultures of pathogenic fungi to the action of different concentrations of sweat he found that normal sweat inhibits fungi, but that copious sweat induced by high temperatures is low in fatty acids and requires concentration before it will stop fungi. He also determined that it was not the acidity of sweat per se that prevented the growth of fungi but that this property was specific for certain fatty acids.

In 1938 Peck and coworkers published a report on the action of fatty acids on *Trichophyton gypseum*, the most common fungus causing dermatophytosis, and on related pathogenic fungi. They found that the antifungus action of fatty acids increased with the number of carbon atoms and that a slightly acid reaction was essential to their activity. Excessive neutralization diminished their action.

Dr. Peck believes this may help to explain why perspiration is unable to prevent fungus infection in areas like the toes and groin. Through the action of bacteria on urea and other nitrogenous substances in unventilated areas, alkaline substances like ammonia may be formed which reduce the acidity of the fungicidal acids below the effective range.

Starting with Peck's first clinical report on the use of fatty acids in fungus infections in 1939, Keeney, Sulzberger, Hopkins and others followed suit, and we have today a body of clinical evidence for various fatty acids in the treatment of superficial fungus infections that no longer permits of any doubt.

By PHILIP H. VAN ITALLIE

PHOTOS COURTESY WYETH INC.

The fungus conditions in which the fatty acids are therapeutically valuable are not limited to athlete's foot, although this is their major indication. Favorable clinical results have been reported with them in sycosis barbae (so called barber's itch), tinea crurae (jock strap itch or ringworm of the groin) and in the highly resistant infections due to *Candida albicans* in the ear (othomycosis), in the vagina (mycotic vulvovaginitis) and in the mouth (thrush). Encouraging results have also been reported in the treatment of ringworm of the scalp (tinea capitis), but in this condition the nature of the pathogenic organism makes a great difference in the response.

The earlier reports have been about equally divided between the value of propionates and that of the undecylenates. The latter are derived from an unsaturated acid with eleven carbon atoms never identified in natural secretions. It is made by the destructive distillation of castor oil. It has a potent antimycotic action but has been found somewhat more irritating to the groin or body.

Keeney and associates of Johns Hopkins found propionatepropionic acid ointment highly effective in the clinical treatment of athlete's foot. In laboratory experiments with cultures of the highly resistant pathogen, *Trichophylon mentagrophytes*, they found the propionic ointment superior in both fungistatic and bacteriostatic activity to Whitfield's ointment, 10% ammoniated mercury, 5% sulfathiazole, and 0.5% tyrothricin ointments. This antibacterial action is highly important in preventing secondary infections.

Though caprylic acid, a straight chain fatty acid with 8 carbon atoms, was recognized as a major component of the fatty acids in human sweat as early as 1939,the therapeutic value of this acid in fungus infections was not investigated until 1944 and 1945 by Keeney and coworkers. They found it more effective than either propionic acid or undecylenic acid in dermatophytosis of the feet.

The latest development in fatty acid therapy is the use of combinations of propionic and caprylic acids. This combination was the subject of a paper in the November 1947 issue of Archives of Dermatology and Syphilology by Doctors Peck and Russ of New York. Their report covers both in vitro action against *Trichophylon mentagrophytes* and clinical effectiveness.

Agar cup culture tests demonstrated that the combination of propionates and caprylates was more effective in inhibiting the growth of this resistant organism than either fungistat alone.

An ointment containing both propionates and caprylates was employed clinically in the treatment of ringworm of the groin, of the glabrous skin, of the nails, and of the hands and feet. In all these conditions the results were encouraging, but they were most satisfactory in the group of 73 cases of athletes' foot.

There was a striking improvement in the first two weeks in the majority of cases, much more rapid than was observed in similar cases treated with propionates or caprylates alone. Itching was controlled more rapidly than had been possible with any preparation previously used.

In the two instances where irritation was observed following treatment with full strength ointment (12.3% sodium propionate, 2.7% propionic acid and 10% sodium caprylate in an ointment base), the strength of the ointment was diminished to one-third and gradually increased until it could be used at full strength. In the two cases cited there was no irritation when the ointment was used on the feet but only on the allergic eczema of the hands.

Recent reports show that propionates are successful

(*Continued on page 543*)

COSMETICS Functions and Formulations

FOUNDATION CREAMS

By HARRY HILFER

OF INCREASING interest to the cosmetic user are the various preparations designed to either further lubricate the skin before application of face powders or preparations whose purpose is to cause the face powder to adhere to the skin surface for a longer length of time than it ordinarily would. These preparations are known as foundation creams and include a large variety of different types of preparations ranging from vanishing creams to the water-in-oil type of preparations. In order to fulfill its function to its greatest efficiency the foundation cream, however formulated, must be capable of depositing after application a thin film of oil which would cause the powder particles to adhere to the surface.

The nature of the oil film may be varied in its nature and its deposition may be accomplished by any of a number of mechanisms, but it must conform to a number of stipulations if it is to be successfully used. It must be apparently greaseless, so that the user would not be consciously aware of its presence, and it must be capable of being spread over the entire area of application without "patching" so that after the face powder is applied the subsequent effect may be smooth and homogeneous.

PHOTO COURTESY YARDLEY

As far as the cream itself is concerned it must be easily applied and capable of being spread over the face with a minimum of effort. A small amount should be capable of being spread over the entire surface. It should be so formulated that the aqueous phase could evaporate soon after application so that there need not be too long a period of waiting for the final disposition of the anhydrous oil phase before face powder is applied. The film also must be able to offer a fair amount of resistance to moisture since the cream must also act as a protective agent against perspiration and the possibilities of its causing the face powder to appear "streaky" as a result.

The possible agencies offered in achieving these functions may be divided into three broad characteristics. The first possibility which would suggest itself would be a low viscosity oil by itself and preparations of this type have been marketed but with indifferent success. More recently there have appeared on the market several preparations consisting of monohydric alcohol esters of several fatty acids, whose function is to serve as a foundation, but whether or not they will be acceptable to the consumer remains to be seen, since their introduction has been too recent to allow any opinion to be passed in this respect.

The foundation creams of proven acceptance are both the vanishing cream type and the water-in-oil types of preparations. The vanishing cream type offers a medium which is versatile enough to be able to allow the formulator to incorporate as many features as he may desire into it without certain limits. It is possible, however, to incorporate a minimum of oil which through this agency may be spread in a thin layer, easily and effectively, which answers the primary requisite. Incorporation of too large a percentage of oil, however, may cause the film to "roll" during application and there is therefore a definite limit to the amount that may be incorporated. The large quantity of stearic acid, usually incorporated into vanishing creams, however, may easily act as the necessary

repellent by itself. The amount of humectant incorporated into these preparations must be carefully regulated so that the film may not be too easily disturbed by moisture.

Vanishing creams generally consist of stearic acid soaps containing a large excess of stearic acid, water and a humectant. The preparations in which these various ingredients are used vary with the effects desired but are usually within a well defined range. Stearic acid, the principal component, is present to the extent of 12-20 per cent, humectant 5-15 per cent, alkali in a stoichiometric quantity so that there may be from 2.5 per cent to 5.0 per cent of soap formed, while water comprises the remainder. Variations in the formula made by introducing other substances such as mineral oil, lanolin and other surface active agents such as glyceryl monostearate, are fairly common so that additional effects may be achieved. In a foundation cream it would be advantageous to keep the humectant at a minimum so that there will be no tendency on the part of the dehydrated film to be removed by moisture and to have as large a percentage of water repellent substances such as stearic acid and lanolin present as possible. The introduction of glyceryl monostearate to such a formula makes it possible to add larger amounts of mineral oil without causing the film to roll, and to reduce the amount of the humectant at the same time since the presence of glyceryl monostearate effectively checks any tendency on the part of the film to lose its water before application has been completed. Since it serves as an additional emulsifying medium, it may possibly serve to further reduce the amount of soap present so that the film may become further repellent to moisture than would have been previously possible. Glyceryl monostearate is used merely as an illustration of the function of these materials and it is certainly not the intent of the writer to confine formulations of the vanishing cream type of foundation cream to this substance. Other hydrophlic substances such as propylene glycol monolaurate and many of the sorbitan esters may serve a similar function.

The introduction of a small amount of lanolin, also, serves as a means of imparting a satin-like finish to the film which is highly desirable. Too large additions of lanolin must be avoided however since the vanishing cream is an oil-in-water emulsion which cannot tolerate too large an addition of it.

The alkali used to form the soap emulsifier may be chosen from potassium hydroxide, sodium hydroxide, borax, ammonia or triethanolamine. The triethanolamine soaps are the most soluble soaps and also form the softest creams—everything else being equal—while the sodium soaps are the most insoluble and form the hardest creams. Potassium hydroxide soaps lie somewhere in between and are the most commonly used. Ammonia soaps are used because of the ability of the ammonia to evaporate with the water after application of the cream, leaving a film which is free of emulsifier, making it more resistant to moisture than it otherwise would be.

It is not recommended that sodium stearate be used as an emulsifier by itself, since its solubility in water is so low at reduced atmospheric temperatures that it could easily cause the emulsion to separate. At elevated temperatures, however, it is a better emulsifier than any of the other stearate soaps and is therefore used in conjunction with soaps of other alkalis to stabilize the emulsion at elevated temperatures. In vanishing creams it also serves as a means of hardening the cream if it should be desired, since the other alkali soaps may not be able to accomplish this desired objective in the quantities in which they are used.

Many of these foundation creams are made with pigments and a small amount of filler incorporated into them. This incorporation accomplished by grinding the pigment and filler (the percentage of the total is usually about 5 per cent) into the humectant beforehand and then incorporated into the cream. If they are used, it is recommended that the use of materials such as chalk which may possibly react with the soap emulsifier to produce an insoluble (in water) soap be avoided since their presence may cause a separation to take place in the emulsion. Titanium oxide fulfills the filler function satisfactorily and is usually used in conjunction with inorganic pigments.

The water-in-oil type of foundation cream is equally in demand and being sold in good quality. Before the appearance on the market of many of the hydrophylic esters, now in more common use, they were made almost entirely from absorption bases, which were able to emulsify into themselves relatively large amounts of water. To this basic formula were then added some mineral oil and perhaps some magnesium sulfate, to effect easier application, and to further stabilize the emulsion respectively. This type of formulation is still in fairly common use and still retaining much of its former popularity. The introduction of water-in-oil emulsifying esters such as the sorbitan sesquioleate, however, has more or less broadened the formulation possibilities of these preparations. Many of the more recent foundation creams use a mixture of the absorption base and hydrophylic esters as a means of formulating the cream and by such usage make it possible to increase the aqueous phase without necessarily increasing the viscosity of the resultant cream.

Since this type of cream is a water-in-oil type of emulsion there is no need to use a humectant to prevent too rapid evaporation of the aqueous phase since the difficulty presented by the external lipoid film to the water phase in the process of its evaporation, effectively lowers the evaporation rate. However, the water-in-oil creams usually contain a larger percentage of lipoids than do the vanishing creams and this may cause their films to be somewhat heavier than are the oil-in-water types. The water-in-oil film on the other hand is usually the better water repellent since the film will

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NEW DEVELOPMENTS IN MEDICINAL AGENTS PART II

Oralator

A new and revolutionary therapeutic principle in the control of cough has recently been developed. It consists of the topical application of an anesthetic-analgesic compound in vapor phase. Symptomatic relief of nonproductive cough is achieved in a few seconds by inhaling as a vapor, 2-amino-6-methylheptane. It is indicated in coughs due to colds and inflammatory conditions of the respiratory system such as laryngitis, pharyngitis, tracheitis, laryngo-tracheitis and acute tracheo-bronchitis. It has also shown value in some coughs in bronchial asthma. By inhaling the vapor from the special Oralator the drug is carried directly to the principal zone where the cough reflex originates. Since it possesses negligible pressor effects and no central nervous stimulation in therapeutic dosage, the margin of safety is wide. It is not recommended for children under seven years of age due to the difficulty children have in inhaling. Each Oralator contains 350 mg. of the drug and aromatics. It is available from Smith, Kline and French Laboratories.

EA 83

A new synthetic vasopressor drug known as EA 83 has been described. Chemically it is 2-methylamino-6-hydroxy-6-methyl-heptane or 2-methylamino iso-octanol. It is chemically related to Tuamine, Oenethyl and Octin. It shows promise as a strong heart and circulatory stimulant in cases of circulatory collapse. It may be useful in many of the usual conditions in which sympathomimetics are effective. Among these are included shock, general allergic conditions, angioneurotic edema, asthma and urticaria.

Metopon

Metopon is the name given to the hydrochloride of methyldihydromorphinone. This compound is the result of a study of drug addiction started in 1929 by the National Research Council with the object in view of finding a non-addicting analgesic comparable to morphine.

Pharmacologically methyldihydromorphinone hydrochloride is qualitatively like morphine even to the properties of tolerance and addiction but quantitatively it is different in all of the major actions. Its analgesic action is at least double and its duration of action is about equal to that of morphine; it is nearly devoid of emetic action; tolerance to it appears to develop more slowly and to disappear more quickly, and physical dependence builds up more slowly than with morphine; therapeutic analgesic doses produce little or no respiratory depression and much less mental dullness than does morphine; and it is relatively highly effective by oral administration.

The dose of Metopon is 6.0 to 9.0 mg. repeated only on recurrence of pain and avoiding regular by-the-clock administration. It is most desirable to keep the dose at the lowest level compatible with adequate pain relief. At present this drug is marketed in the United States by Sharp and Dohme, Inc., and by Parke, Davis and Co. and is to be used for the relief of pain in cancer cases only.

Salicylamide

The search for new, non-opiate analgesics has led to the investigation of many types of compounds but has more or less by-passed the salicyl compounds, possibly because of their low water-solubility. However, recent investigations have been made of the analgesic properties of salicylamide and some of its derivatives and have shown them to equal or exceed the analgesic potencies of the already established analgesic-antipyretic drugs. On repeated administration salicylamide appears to be less toxic than acetylsalicylic acid. On the basis of the experimental work it is thought that more attention should be directed to these compounds.

Methadon

Methadon is the generic term recognized by the Council on Pharmacy and Chemistry of the American Medical Association for the drug known chemically as 6 - dimethylamino - 4,4 - diphenyl - 3 - heptanone. Since Methadon is a synthetic morphine substitute its availability is always assured. It was first synthesized and called amidone by I. G. Farbenindustrie in Germany. It is a white crystalline substance, soluble in water and alcohol but insoluble in ether and has a bitter taste. A comparison of Methadon with morphine showed that 10 mg. of it are therapeutically equivalent to 15 mg. of morphine. It is indicated for the control of pain and discomfort following surgery, in renal colic, in metastatic lesions of malignant tumors, in distress of congestive heart failure and angina pectoris, in aortic aneurysm, in discomfort in poliomyelitis and in control of cough in various conditions. It does not completely relieve labor pains and has a tendency to produce neonatal

By MADELINE O. HOLLAND, D.Sc.

Editor of *American Professional Pharmacist*. This article is reprinted from the *American Journal of Pharmacy*.

asphyxia. It was not too effective as a preanesthetic medication. Various side effects have been noted such as nausea, vomiting, lightheadedness, drowsiness, dryness of the mouth, diaphoresis, mental depression and miosis (following large doses and much less pronounced than with morphine). The dose of this drug varies from 2.5 mg. to 10 mg. dependent upon the severity of the pain. It may be administered orally or subcutaneously. Methadon is available from Eli Lilly and Co. as Dolophine; from Abbott Laboratories as Methadon Hydrochloride; and from Winthrop Stearns Inc. as Adanon.

Cytochrome C

Cytochrome C is an enzyme which has been found to play an important role in controlling tissue oxygenation. It is a protein which is normally present in all living tissues, animal or plant. Improvement has been noted when Cytochrome C was used in angina pectoris, Raynaud's disease, pulmonary emphysema, barbiturate poisoning, degenerative diseases associated with arteriosclerosis and certain cerebral dysfunctions. In cases of angina pectoris improvement has been so great that incapacitated patients were again able to get about. When the body tissues are not receiving sufficient oxygen from without, a supply of oxygen still remains in the blood and Cytochrome C makes it possible for this oxygen to be utilized. Humans placed in pressure chambers from which the air has been partially pumped suffer from impaired vision and thinking just as aviators do at high altitudes. Cytochrome C has been found to improve this condition. The possibility that mental deterioration due to hardening of the arteries may be aided has been suggested, as well as migraine and epilepsy headaches. Cytochrome C is available for clinical trial from Schering Corp. and Viobin Corp.

Khellin

Khellin is the active principle of a plant, *Ammi visnaga Lam.*, which grows wild in Arabia and Eastern Mediterranean countries. For centuries this plant has been a popular remedy in Egypt for renal and intestinal colic. Now it has gained prominence as a coronary vasodilator which does not reduce blood pressure or increase the pulse rate. Chemically the active principle is a dimethoxymethyl-furano-chromone. It appears to act directly on the muscle fibers of the blood vessels and the selective response by the coronary vessels is believed due to their particular sensitivity. Encouraging results have been obtained in the therapy of over 150 patients suffering from various conditions such as angina pectoris, coronary thrombosis and bronchial asthma. The drug is given orally in doses of 40 mg. three times a day or intramuscularly in doses of 90 mg. daily or 120 mg. on alternate days. In bronchial asthma larger doses may be necessary. Full effect of the drug is achieved in one to three days. Further investigation of this drug is being made in respect to its clinical value as well as to its purification and standardization.

Isuprel

Known in Europe as aleudrin, Isuprel is an analogue of epinephrine and chemically is α-(3,4-dihydroxyphenyl)-β-isopropylamine ethanol. It is also known as isopropyl epinephrine and is similar to epinephrine in action. It is superior to the latter in its bronchiospasmolytic activity. In acting on the circulation it does not elevate the blood pressure but rather lowers it, due to the dilatation of the peripheral vessels. Undesirable side effects and tachycardia are minimal. The drug is administered orally, subcutaneously or by oxygen-aerosolization, never intravenously. Alarming reactions may occur if more than 0.5 cc. of a 1:1000 solution is given subcutaneously. The dosage by inhalation is 1.0 cc. of a 1:100 dilution every 3 hours; by subcutaneous method, 0.20 to .033 cc. of 1:1000 dilution; and by mouth, 30 to 90 mg. daily. No addiction has been noted. The drug possesses great possibilities in the management of the chronic asthmatic. Isuprel is under investigation by Winthrop Stearns Inc.

Priscol

Priscol hydrochloride is thought to have value as a vasodilator and sympatholytic agent. Chemically it is benzyl-imidazoline hydrochloride and is related to histamine and phenylethylamine. This drug acts chiefly as a sympathomimetic in that it causes peripheral and coronary vasodilation; stimulates the heart and increases its output; and has an inhibitory effect upon the gastrointestinal muscles. It also acts in some respects like acetylcholine and like histamine and in an effective adrenolytic agent and sympathomimetic anti-pressor. Use of this drug in human therapy is under further investigation by Ciba Pharmaceutical Products Co. in the United States although it is available in England and Europe.

(*Continued on page 505*)

PLAN YOUR SALES TERRITORIES!

BY WILLIAM T. DOYLE

JUST about a year ago we decided to make a carefully detailed study of Lakeside's sales territories to see if we could improve the efforts of our men through better territory layout. Many weaknesses presented themselves which are probably common to sales territories in many companies. It might, therefore, be of interest to report the methods we employed and the changes made in gearing ourselves for the tough competitive market.

Our basic plan called for a well-trained, properly screened force of 200 men. The territories were to be readjusted as indicated so that the potentials were distributed along natural trade-flow channels with each man getting a fair opportunity to earn a good living.

As in the case of many companies, Lakeside's problems of sales territory layouts were primarily due to rapid expansion. Territories were set up here and there without proper regard for efficient, economical coverage. Our first step was to readjust only the salaried sales territories as the few commissioned men on our staff were numerically small and profitable as well.

On analysis, we found men having to cross natural barriers, such as a chain of mountains or a wide river, to cover one or two outlying counties which could have been taken better care of by men in another territory. Several times we discovered territories that has been laid out without considering natural trade flow . . . trade, like rivers, flows through definite channels. The alert sales manager recognizes that it is much easier to swim with the current than against it.

We set to work analyzing each of the three thousand odd U. S. counties. These were then grouped into 135 primary marketing areas. The 200 projected sales territories were laid out within this framework. The realignment was made on the basis of giving each of our men one-half of 1 per cent of the Lakeside potential.

To do the territory layout job properly, tools were necessary. The following are the implements we found most helpful:

1. *The National Wholesale Druggists Association Map of Distribution.* This is very valuable in checking drug trade flow.
2. *The Sales Management Survey of Buying Power.* This valuable sales tool gives a county by county sales potential breakdown which takes into consideration population shifts year by year, as well as income changes. The potential is broken down to three decimal points.
3. *The Sales Management Quality Index.* This implement shows the relationship of each U. S. county to the maximum potential (100%).
4. *Hearst's Magazine Marketing Division System.* We found this especially useful as a base for grouping counties located in rural communities into sales territories.
5. *The U. S. Census Bureau* figures for 1940 were used in helping to determine the number of drug stores in each county. While this information was not up to date ,it did prove useful.
6. *The O. P. A. ration book registration* gave us information on the number of families and the population as well. These figures were used as a check against the 1940 census and provided the data we needed to follow the population shifts.
7. *A breakdown of physicians and osteopaths* by counties was obtained from a medical mailing service.
8. A study was made of *the hospitals and hospital beds in each county.*
9. *Highway maps* were used as a check against efficient, economical territory coverage.

In conducting our study we found it most important to make territory readjustments based on shifts in population. If the Sales Research Department does not make these details known to sales management, selling costs are sure to skyrocket in the territories involved. It is most important that sales territories be kept in tune with changing economic conditions.

We mentioned earlier some of the economic factors which we used to lay out sales territories of approximately equal potential. It might be well at this time to elaborate a little on just what those factors comprised. Since there are some 3,000 counties in the United States, it was essential to study the population of each. Some have populations ranging from a few hundred persons in one case to more than a million in others. The usable income (earnings after taxes) is bound to vary from county to county and from person to person. We were interested in the number of people plus the number of dollars available to buy medical services and Lakeside merchandise. These factors would determine to a large extent our market. Any combination of counties into sales territories must take these factors into consideration or you are bound to find one man working himself to the bone for pennies, while another man in a territory having a greater potential unable to do full justice to his territory. Both of these territories are very expensive to the manufacturer. The first type of territory makes it almost impossible for the salesman to earn a bonus thus encouraging rapid turnover; while in the second

territory a man is able to obtain only a fraction of the potential and thereby has to highspot the territory.

A number of years ago one of the sales management magazines* became interested in developing a scientific basis for the measurement of sales potential and salesman performance as against territory potential. After considerable study there was evolved a formula whereby they were able to estimate through income tax returns, withholding taxes, bank clearings, retail sales figures, and other data available through the Treasury Department, the Census Bureau, and certain private sources of information, the amount of spendable income, retail sales, gross drug store sales, and many other factors of interest in helping to establish territory layouts on a scientific basis. Adjustments are made by this publishing service on an annual basis. We found this data to be most useful, and when compared with our own data, gave us a sound working foundation on which to lay out sales territories.

By using a weighted index we were able to get a pretty accurate picture of what portion of the Lakeside national potential could be found in each county.

Now this does not mean that the buying power factor can be used blindly by every type of manufacturer. A company making weaving machinery cannot expect to sell its product in Holmes County, Ohio, for instance, for that is a strictly farming area. But for consumer goods, medical supplies and other products in similar classifications, the potential buying power factor does apply as one of several indicators of potential business. In our particular case, additional factors besides usable income, population, and retail sales volume had to be considered. Such data as the number of doctors, drug stores, hospitals, and hospital beds had to be computed on a county basis.

One important consideration which is often overlooked by the sales department is economical, effective coverage. Too many times we find salesmen having to cope with inaccessible mountains, rivers having no bridges within easy reach, great stretches of desert, forests that are impregnable, and roads that are well-nigh impassable. A look at any conventional map of the United States will tell us that more detailed information is necessary if we are to more fully understand the individual salesman's territorial problems. It is the highway map that helps us to see each territory through the eyes of the man responsible for it.

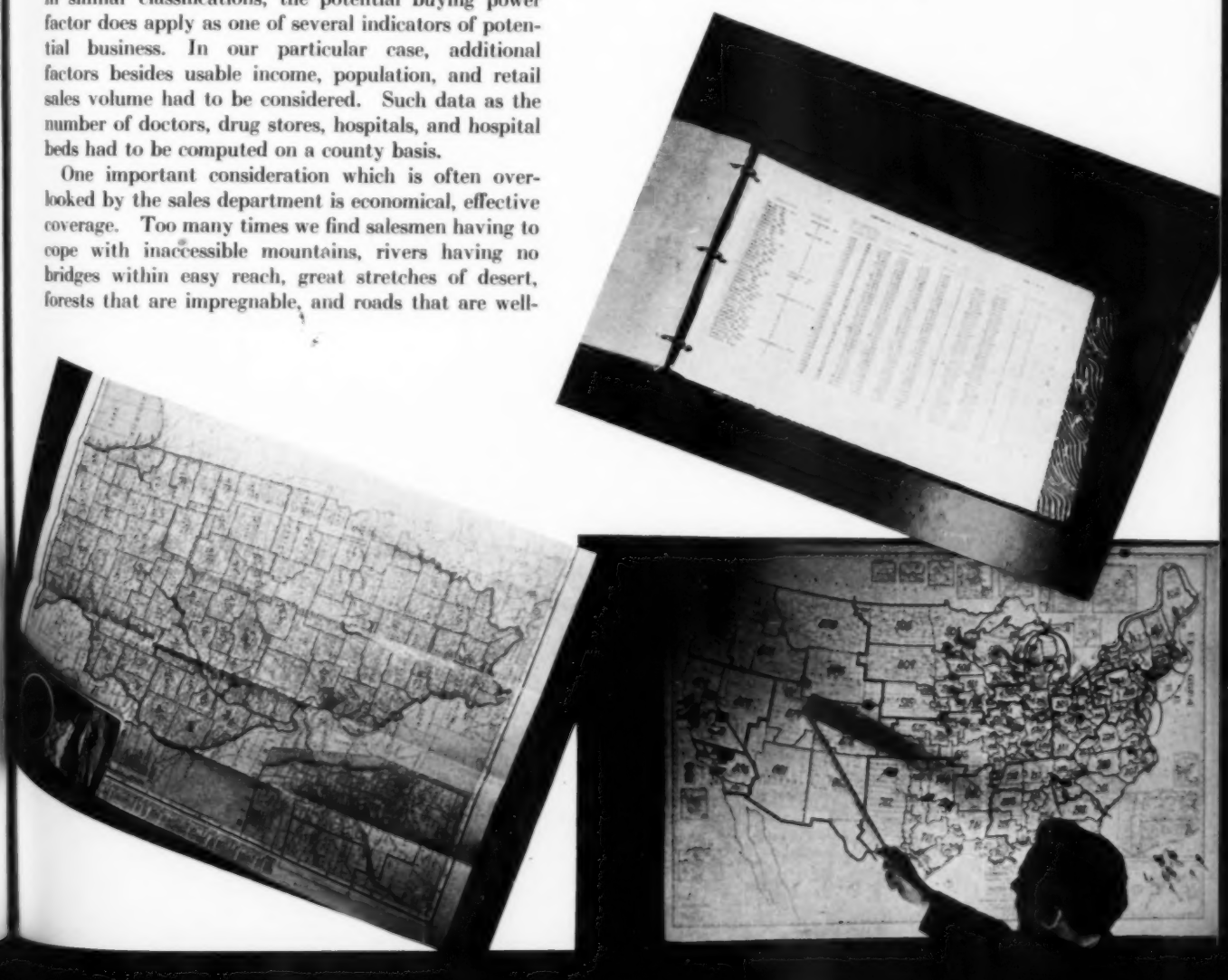
In setting up our territories we did these things:

1. Laid out the 200 territories within 135 primary marketing areas.
2. Next we superimposed on our original territory layouts a Cellophone map of wholesale distribution.
3. Finally we laid over that each territory broken down on a highway map.

Steps two and three just referred to gave us two checks against our territory breakdown. The National Wholesale Druggists Association Distribution Map told us whether or not our territories were set up to follow natural tradeflow. Laying out each territory on a highway map gave us the information we needed to determine whether or not we could expect efficient, economical coverage from our men. After more than nine months in operation, we are more convinced than ever that our procedure was sound. High morale and lowered selling costs provide the most eloquent testimony to the effectiveness of the methods employed.

Now that we are in the midst of a strenuous competitive market it is more important than ever that sales managers give thoughtful consideration to more

(*Continued on page 543*)



CHEST RUBS AND ANALGESIC BALMS

By M. A. LESSER

Look into the medicine cabinet of the average family and one is almost sure to find a jar or tube of a chest rub or an analgesic balm. Except for improved bases and an occasional new active agent, preparations of this sort have been in use for centuries to alleviate colds and for the relief of aches and pains. Although some of the older indications for such products have been replaced by more specific remedies, they are still widely used by the general public. Almost every major pharmaceutical producer markets an analgesic ointment of some sort and chest rubs are among the best known products bought for simple home treatments.

Aside from the fact that chest rubs and analgesic balms are often quite efficacious, there are other factors which help to account for the wide popularity of these products. As remarked by Fantus,[1] one must not lose sight of the fact that people have faith in local treatment and that it appeals to their imagination. Hence such treatment carries with it a certain degree of psychotherapeutic potency.

Even though there may be certain differences between chest rubs and analgesic balms, it cannot be said that there is any real line of demarcation between them. Often considered synonymous and frequently used interchangeably, the two kinds of local applications have overlapping indications and depend largely upon the same mechanism for their effects. Many of the more important active ingredients, as well as the bases or vehicles, are used in common in the formulation of both types of products.

In general, chest rubs are just what the name implies. They are ointments or medicated creams intended primarily for applications on the chest, back and around the throat, but are also useful when rubbed on other parts of the body. Chest rubs containing mustard oil are generally intended for use in the treatment of chest colds, local congestions, coughs due to colds and minor throat irritations. Such compounds are also used to improve local circulation and to relieve the painful symptoms of neuralgia, arthralgia, and muscular aches and pains.

The vapor type chest rubs are said to provide a two-way action. Such a product acts directly on the skin to produce a local hyperemia and at the same time releases vapors that are soothing to the respiratory passages. This type of rub generally contains menthol and camphor, usually with methyl salicylate, as the active ingredients. They find their greatest employment for the relief of hear colds and nasal irritations and as aids in treating chest colds, throat irritations and coughs due to colds. The beneficial vapor action can also be obtained, in cases of nasal irritation or head colds by applying a little of the ointment to the nostrils. Where a stronger vapor action is desired, as in laryngitis or huskiness due to colds, such compounds are often used in vaporizers or steam kettles or the like. Products of this sort are often recommended for certain forms of local congestion and irritation and are sometimes used as medicated dressings for bruises, frost bite, insect bites and stings, and for minor injuries.

Analgesic balms may be described as ointments containing methyl salicylate plus menthol or camphor or both, in a suitable base. They are widely used in the symptomatic local treatment of simple muscle and joint pains such as rheumatic pains, lumbago, sprains and strains, and muscular soreness from exposure, fatigue, exertion or dampness.

Chest rubs and analgesic balms act to relieve pain by one of the oldest principles in therapeutics, that of counterirritation. Counterirritant drugs, used to produce characteristic stimulating effects on the shin, cause local and remote effects. The local effects are a warm sensation with redness and hyperemia over the area of the skin where the application is made. The remote effect is relief of pain and inflammation in internal organs situated in the same part of the body on which the preparation is applied. Thus a counterirritant applied on the upper part of the chest will relieve pain in the broncho and lungs. Effects of this kind result from circulatory and reflex responses.[2]

The test of time has proved that counterirritation applied locally often relieves pain arising from neighboring or deep-seated lesions. Counterirritation involves the stimulation of cutaneous sensory nerves to bring about a physiologic response in the deeper organs or tissues. Irritation of the skin may relieve inflammation in deeper-seated structures; diminishing the pain, possibly the congestion, and perhaps leading to an earlier and more conservative termination of the condition. However, many investigators are of the opinion that counterirritation affects the adjacent or neighboring tissues more than the deeper organs.[3]

Pharmacologists differentiate four different degrees of counterirritation from the application of various drugs.[4] The mildest degree of counterirritation is rubefaction. This is the level of action provided in chest rubs and analgesic ointments. As stated by

PHOTOS BY BETTMAN ARCHIVE

Blumgarten,[2] rubefacients are used (a) to relieve pain and tightness in the chest and congestion and inflammation in the lungs, (b) to relieve pain and discomfort and distension of the stomach and intestines and other remote organs, (c) to relieve muscular pains and swelling of inflamed joints, (d) to relieve the pain of contusions or sprains, and (e) to accelerate healing of tissues by improving their circulation.

In addition to their counterirritant action, some topically applied rubefacients may produce systemic effects after absorption. This is well indicated in the studies made by Beutner and his associates.[4] They feel that their findings justify the conclusion that the cutaneous application of methyl salicylate in various bases "exerts not only its long-established counter-irritant influences (vasodilatation, decongestion, induction of active hyperemia), but also a systemic action which perforce must be analgesic, antipyretic and antirheumatic, since these properties are common to the salicylate upon absorption."

Insofar as chest rubs and analgesic ointments are concerned, the most important active ingredients are methyl salicylate, menthol and camphor. When materials of this sort are mixed they have a definite influence upon each other with regard to speed and duration of action.[1] Of interest in this connection are the observations made by Beutner and his co-workers[4] on methyl salicylate ointments made with and without menthol. They found that the presence of menthol promotes greater absorption of the salicylate.

As already indicated mustard oil is present in a number of chest rubs. It is a powerful irritant and the amount present in a rub must be limited to a low proportion. Illustrative is Mustard Ointment, N. F. VII which is used as a counterirritant, rubefacient chest rub. Said[5] to be similar to well-known proprietary preparations, this ointment contains 2 per cent of volatile oil of mustard in a base of white wax and lard. People applying such an ointment should be warned against touching the eyes. When preparing chest rubs, particularly those containing mustard oil, it is common practice for manufacturers to dispense products with lower proportions of active ingredients. These less strong ointments are intended for children and those with delicate skin.

In addition to these more familiar agents, rubs and balms may contain adjuncts, like chloral hydrate, thymol, guaiacol, encalyptol and various essential oils. Occasionally, certain proprietary analgesic balms may include certain rather special ingredients in addi-

(*Continued on page 554*)

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The famous Standard plastic closure is available—from stock—in 11 sizes from 8 to 38 mm; in short, medium and tall skirt; in regular finish or with well for applicator or holder for dropper. In black, brown, ivory, red, and robin's egg blue (or we can match any color you want). Write for prices on whatever quantity you are interested in.

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PACKAGING and SELLING

ADVERTISING VERSUS SALESMEN

THERE is a theory of advertising to which many executives in advertising agencies are very susceptible. In fact at the very first sign of this microbe these fellows are very badly infected.

The theory is that if the owner of a branded product will only spend enough money in advertising and will get a good enough advertising idea, there is no need at all for a sales force.

There was a time about 25 years ago when some pretty big leaders in the advertising business implicitly believed in this theory, and were quite successful in establishing it with certain large advertisers. We recall vividly the days when Congoleum was supreme in the house furnishing field. Just about every magazine, including most of the farm papers that could print a four-color page, carried a full color schedule on Congoleum. The weight of this advertising was so constant and so overwhelming that the consumer universally was saturated with this advertising so that when she went into a house furnishing store, or a hardware store, a country store, and in some cases a drug store or what-have-you, she was supposed to be so groggy from this continued dominating suggestion that all she could do was to stutter Congoleum.

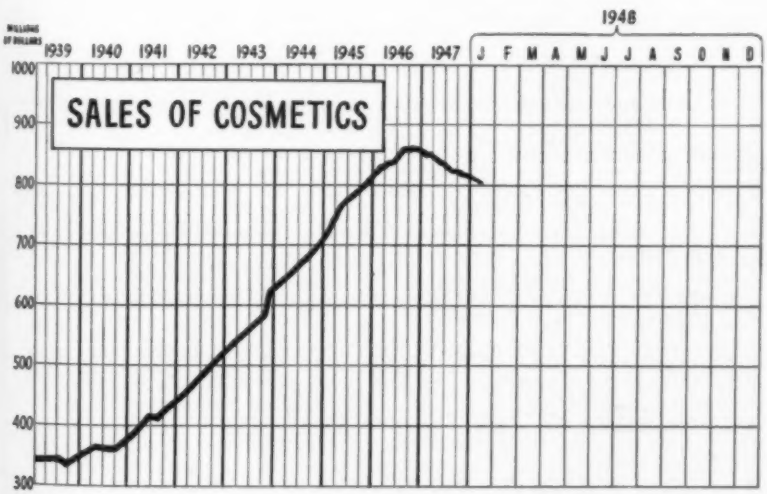
For two or three years this seemed to work and then suddenly something happened and soon Congoleum's name was linked with that of a rather small competitor who has had no material record of previous advertising.

Bon-Ami was another company that pleasantly sailed this chartered course for a brief gay period.

After a series of collapses the theory seemed to bring rather a sour taste to the mouths of manufacturers, and there was a very general, in fact unanimous, turn to the belief that a sales force was a necessary adjunct to selling, irrespective of and wholly unrelated to the degree of consumer demand a manufacturer could get from his product. This belief has been generally hightened as manufacturers discovered more of the technical evidence of what actually happens at the point of sale within a retail store.

For instance, in the grocery business there are super-markets where it could be said that an advertised package is displayed on the shelf and left wholly to the mercy of public opinion and susceptible only to the degree of public approval created by advertising. This has been found very far from the actual fact. There is an enormous percentage difference, sometimes as much as 30 per cent, in the sale of any branded heavily advertised product, depending upon the display space it gets in the store, that is the amount of display, the position in the store, and above everything else the position of the display in relation to eye level.

So far as we know there has been only one company in the cosmetic business which has clung to the idea that it can sell without salesmen. The company for some years maintained an annual volume of several million dollars and operated with great success during the period when it happened to have a superbly successful radio program. After several years the company gave every indication that it could not avoid the cycle which seems to affect this type of operation. That is, this method will apparently work with some products during a period of unusually successful advertising appeal but no one has been able to maintain an advertising appeal at the high pitch required over any substantial length of time. Anyway,



Retail sales of cosmetics for the twelve months ended with January 1948 amounted to $802,704,000. This compares with $813,008,000 for the twelve months ended with December 1947 and with $855,802,000 for the twelve months ended with January 1947.

this cosmetic company abruptly changed its tactics and built up a fairly adequate sales force which has now been operating for about a year.

During this year advertising operations were changed and it again appeared that the company had hit upon an advertising formula which management thought might once more carry the load without a sales force. It just happened that a detailed statistical analysis of sales figures showed that the company business had been fairly uniformly running about 7 per cent above the same period last year, but in one territory out of the 22 sales districts, a territory, incidentally, which happened to be one of the richest in the country, sales were 36 per cent below last year. The company then discovered that this one single territory had been without a salesman for the past six months. Now there is a great deal of uncertainty and there seems to be every evidence on the part of management that perhaps the salesman in direct contact with the point of sale may after all be necessary to build the proper volume, irrespective of the weight and quality of the consumer advertising.

Here Again

History has certainly a way of repeating itself. About 15 years ago there was a period in which we had quite an epidemic of companies arriving at the brilliant idea nobody had ever thought of before of selling cosmetics in chain grocery stores. This was supposed to be a wide-open opportunity.

In one of the cases, as we recall, one of the big grocery chains was involved in some way in the deal to manufacture a line of cosmetics which would be sold only in this type of outlet.

Since the war, there has been a great deal of conversation that the manufacturers of some of the mass distributed, heavily advertised cosmetic lines would go over to the super-market with disastrous results to the poor old druggist.

Now we have the announcement that Allied Home Products of Beloit, Wisconsin, will bring out an exclusive new line of beauty aids to be sold exclusively through grocery stores on a nation-wide basis. The newspaper report says that this may be a significant development in the cosmetic trade. Allied has established the Winsome Cosmetics as a separate division headed by Alfred E. Kovnat, formerly sales promotion director of Helene Curtis Industries, who will supervise the division's operations. The products which will retail at 49 cents include a hand cream, skin cream, shampoo, hair pomade, hair dressing, pine bath oil and liquid bubble bath.

Agency Service

There is a very great diversity of opinion among advertisers as to the kind of service they believe they should get from their advertising agencies. There are some advertisers who take the sturdy attitude that they are thoroughly competent in their own business and that all that they want from an agency is the production of the most effective advertising page that can be produced. The other extreme of advertisers believes that in return for the 15 per cent commission their agency should not only prepare advertising but run about every errand that anyone in their sales or advertising department can think of.

Between these extremes is a large body of advertisers who still thinks that the most important job of the agency is to produce the kind of advertising pages that will sell goods. But they also believe that the advertising agency should legitimately render certain other services and that the agency should be well equipped to handle such a service. This service normally includes market and copy research, research on marketing and consumer buying trends, study on store promotions, store merchandising and store display.

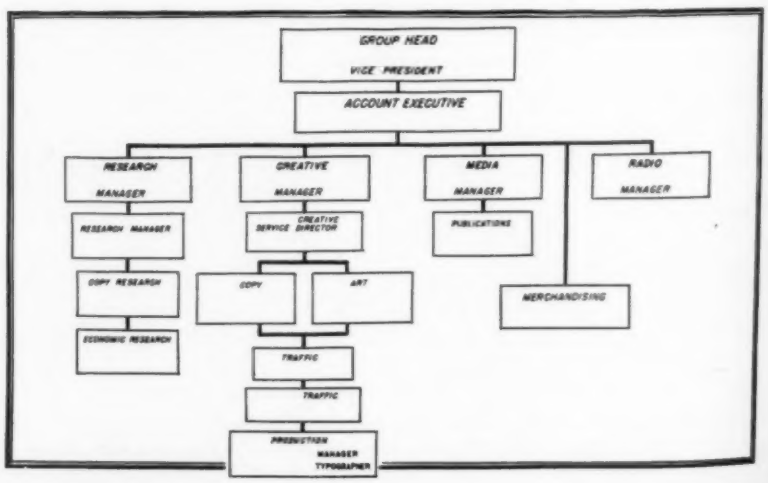
The accompanying chart shows the way in which one of the largest advertising agencies organizes the service rendered to a cosmetic account in the million dollar annual advertising class. This organizational chart gives a pretty good bird's-eye view of the way in which all of the work on a single advertising account can be coordinated within an agency.

Two Lost Case Histories

To a very large extent the really competent sales executives in industry consciously or unconsciously base their judgment in policy decisions on a sort of vague but fairly tangible collection of business case histories which they have collected as they grew up in business.

Somewhere in their minds they have a great collection of "do's" and "dont's" and very often when they make a quick decision the opinion is really formed on a series of experiences which flash through their minds. It is really too bad that there isn't some way in which there could be recorded the case histories of many companies, of promotions and other experiments in retail selling. Such a record would save heartaches to many men who plunge enthusiastically into a policy which they believe they invented, but which may actually have been tried many times and failed in each case.

There have been two notable developments in the cosmetic business in the last few months which would well repay an extended business study and a case history record if it were possible to get the facts. These developments were the sale of Harriet Hubbard Ayer and Daggett & Ramsdell. Here you have two companies whose roots extended deep into the beginnings of the cosmetic business in this country.



What Every Manufacturer Should Know about WOMEN

THE TROUBLE with the obvious fact that ¾ of the consumer goods market is WOMEN is—that the fact is *obvious*. Because it's obvious we assume we know ALL about it. We say, "Okay—*women buy ¾ of all goods sold at retail*—so what?"

Well—leading national merchandising organizations think a great deal about that *obvious* fact. They conduct nationwide surveys—just to learn *how* women buy. As a result, they manufacture and *package* their products primarily *to attract and sell women.*

Those nationwide surveys show that women make ¾ of their decisions as to *what brand* to buy—in the stores—at the point-of-sale—*on impulse.* And that there—*the appearance of a product's package* is frequently THE decisive sales factor.

HOW TO MAKE YOUR PACKAGE SELL!

Let Ritchie help you develop (at low unit cost) a package that meets the increasing challenge of self-service retailing. A practical, production-planned package that instantly identifies, fully protects and conveniently dispenses your product. Easy to fill or pack—to handle—to stack or display. An attractive, eye-stopping, SELLING package.

JANIS CARTER, starring in I LOVE TROUBLE . . . a COLUMBIA Production

• As the motion picture industry capitalizes on good looks, keen merchandisers capitalize on the selling power of an *attractive* package.

Never Underestimate the Power of the Package!

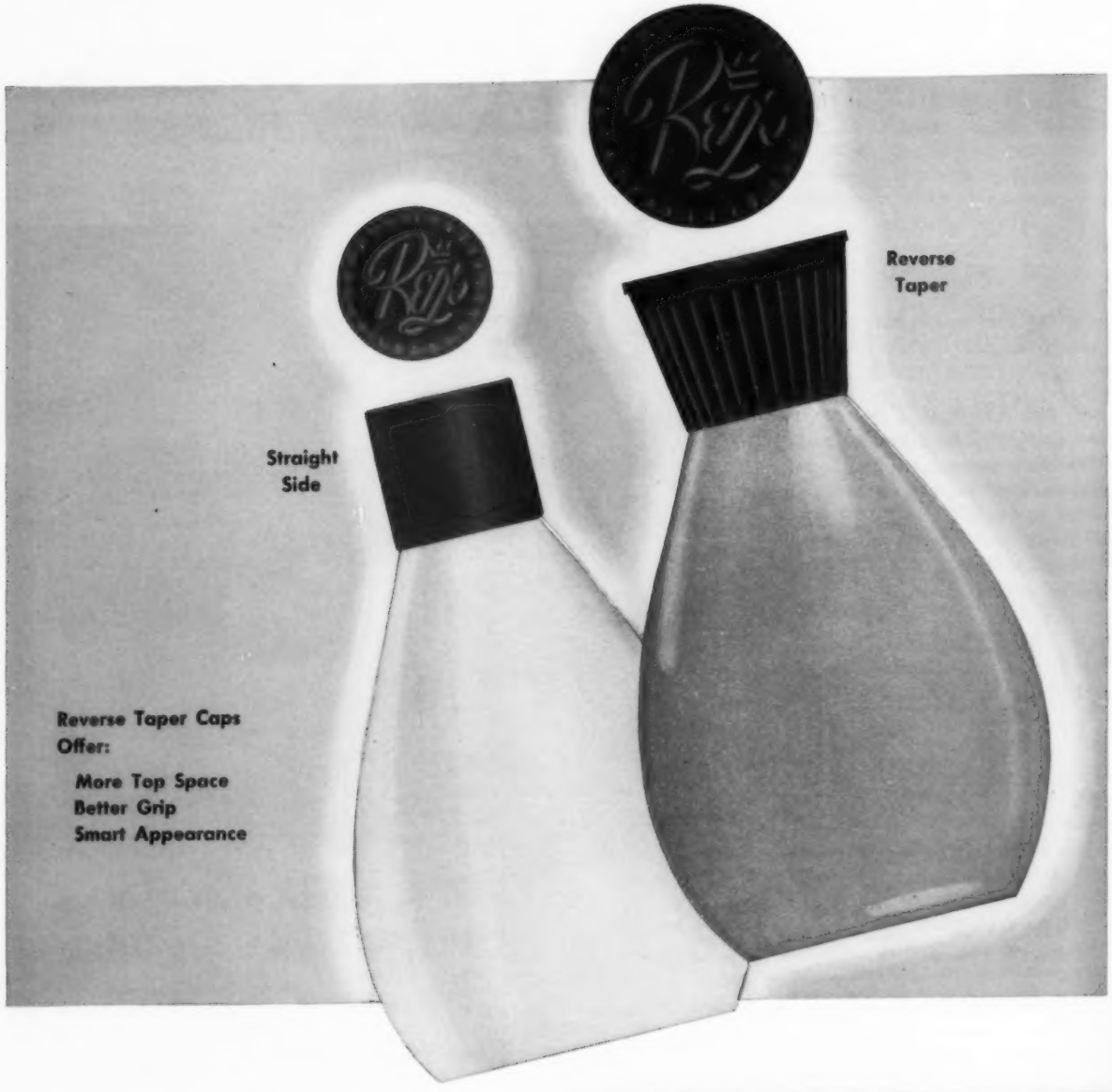
W. C. Ritchie and COMPANY

★ SET-UP PAPER BOXES
★ FIBRE CANS
★ TRANSPARENT PACKAGES

TRADE MARK

NEW YORK • DETROIT • LOS ANGELES • ST. LOUIS • CHARLOTTE • JACKSONVILLE • ERIE

REVERSE TAPER CAPS



Putting an Armstrong's Reverse Taper Cap on your package not only enhances the appearance of your package but the extra top space permits you to give better display to your name or trade-mark. Large display, in sparkling color, right on the top of your package means quicker consumer recognition . . . quicker sales. For design and color suggestions and cost estimates including mold costs, send a sample or drawing of your package to Armstrong Cork Company, Glass and Closure Division, 1904 Prince Street, Lancaster, Pennsylvania.

ARMSTRONG'S
Artmold
PLASTIC
CAPS

Packaging Forum

By Josephine von Miklos

It seems the honey-moon is over . . . or, at least, we are waking up to the fact that people, and that, of course, means women, no longer buy things like the proverbial drunken sailors. Whether it be that swollen inventories refuse to be reduced as rapidly as gross profit philosophers expect, or whether it is the fact that everybody is a little or a lot afraid of the uncertainties of the political air, the purse strings are tight again, all down the line. And, of course, the creative talent suffers first, because for some strange reason, manufacturers feel bad times are not the times to be creative.

Yet, there seem to be other ways of looking at things like these. It is perfectly true that no one can cram down merchandise a saturated market's throat. On the other hand, life seems to have a way of going on just the same and there are many things people need and want whether they are rich or poor. The point is, during the war there was a great deal of talk about selling cosmetics for morale. There was the classic case of the drill press operator who couldn't press a drill without first carefully making up her lips. Right now our morale seems to be even lower than that. But somehow or other it is a different sort of a dip, for this time, in addition to needing perking up to be able to face the great issues, we are simply afraid. And those who do, or, at least might, don't talk. So all we do is worry and sit home and don't use lipstick, and consequently don't sell any either.

Yet, there are so many things we could be doing. If people haven't got the money to spend on expensive luxuries, they still do need every day things for grooming. If packages are too expensive the way they were conceived in the lush days of a seller's market, why can't we put our various heads together and find ways to produce less expensive packages? Assuming that one should never reduce the cost of the merchandise itself, or, substitute cheaper ingredients, there ARE ways, in almost every instance of too high a cost, in which corners can be cut. If a certain private mold perfume bottle in a certain handmade box makes the retail price prohibitable right now, why not re-design the hand-made box and save a good deal of money right there? And there must be things like that which could be done at almost every point.

This is by no means to say we should in any way go back to the haphazard method of substitute material we had to embrace when the material shortages were really acute. Quite on the contrary, this is to say, that now more than ever, good and logical and practical design should come to the fore and step into the breach with the one and only ingredient that has even made a success of business, of personal relationships, of statesmanship, and of war and peace, IDEAS! Manufacturers seem so afraid to reduce prices for fear the public might suspect something on the order of a fire sale. If some of that terrific brain power used in merchandising and promotion schemes were simply and directly applied to the idea of selling the public on *cooperation*, we might get somewhere fast, and rather happily.

Times are difficult, we might say, and you, the public, find it harder to pay the price we must ask, for this product. We want you to have it though. We don't want you to buy other, cheaper, less proven goods. So here. Same thing, exactly, we guarantee it is the same thing. But we have saved a little money on this bottle or box or label or print job, and so we can pass this saving on to you. The main issue, after all, seems to be that we must sell to live, and that, in the last analysis, we must also buy to have the things we want and need. This is, perhaps, no fancy psychological merchandising trick, but it certainly would be a lot of fun to try . . .

Both companies had excellent products, each of them had the liking of the trade and certainly their names were widely known to the public. Yet with al these favorable factors these two companies were relinquished to new owners and new management, not on the basis of a healthy company selling or merging because it was a profitable move, but because in some way and for some reason the two companies were not holding their own in the postwar market.

There was plenty of trade talk about what each of these companies should have done, and what they should not have done and the various obstacles which they faced from management and their financial or political reasons.

But there probably will never be the kind of competent analytical research into the methods and policies which would make such an invaluable record for future management in this industry.

How That Girl Has Grown!

If, in the near future, you have to give a speech at any convention or sales gathering, it looks as if the most interesting subject will be the problems of "point of sale" selling and cooperation. Business writers are pounding this subject and convention speakers are covering it.

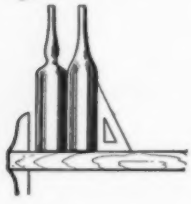
In a recent article in the New York Sun, J. B. Wallach, business news editor, discusses the subject. He states, "Advertisers in national media are coming more and more to recognize that their fortunes lie not in the laps of the gods but on the lips of the 'ladies-in-waiting,' in other words sales people." He continues, "Manufacturers anticipate that in succeeding months selling the person who sells may be even more essential to success than trying to influence the customer who buys."

This whole subject is mightily interesting to us, because we have studied it from every possible angle over the last 10 years.

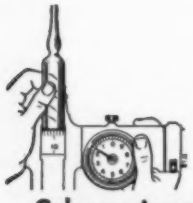
In planning the distribution of subscriptions for BEAUTY FASHION the primary objective has been to reach the individual girl behind the perfume and cosmetic counter in the better class store selling perfumes and cosmetics, Through direct personal contact and through club subscriptions, BEAUTY FASHION has now a direct subscription contact with over 80 per cent of the salesgirls selling perfumes and cosmetics in the better class department and specialty stores, independent drug stores and the individual stores of drug chains. This program has been carried further to a direct personal acquaintance with these girls and store executives through the retail training course given by "The Cosmetic School of Beauty Fashion."

Three symbols of superiority

Coby ampoules are "vacuum-free before snipping." Glass dust that results from snipping operation is *not* sucked within the ampoule. It is, rather, readily drawn up and carried away by giant dust collectors attached to each cutting bench.



Coby ampoules stand up straight without support. Ampoule necks are more concentric with filling needles, and machine-filling is more rapid, and accompanied by less breakage.



Coby ampoules are carefully calipered to ensure greater uniformity of inner volume. When subsequently filled and sealed, Coby ampoules aid materially in finishing the package that "sells on sight".

Coby engineers are constantly developing improvements that continue to make the Coby ampoule a better ampoule. Descriptive circular and price list of regularly stocked ampoules available on request.

THE COBY GLASS PRODUCTS CO.
ATTLEBORO, MASSACHUSETTS - U. S. A.

The Cosmetic Trend

News from the department store counters remains contradictory. While the majority of buyers are still worrying about last year it is widely acknowledged that losses are not quite as heavy as had been believed and that there is every chance of a near improvement.

What makes many buyers hopeful is that the sales declines of their departments, notwithstanding, there has been a wide spread improvement of the departmental position of the toilet goods counters through most of last year, and, more markedly, since the beginning of the present one. Records for the new year are not yet sufficiently complete to permit a conclusive analysis. But, to take December of last year for an example, San Francisco stores reported a sales drop of their toilet goods counters of 4 per cent against December of 1946. Yet, in departmental-ranking toilet goods stood high with a 4.3 percent participation in total sales which is better than the national average. Similar good showings were made in the Southern part of the West Coast territory, in the Pacific North West and in the Inter Mountain State section of the Federal Reserve District. Satisfactory conditions are also reported from the New York district, where toilet goods counters were holding up comparatively well, although their position is not quite as favorable anymore in "per cent to total sales" ranking as it was in previous years, when they faced less competition from other counters of the stores.

As to the beginning of the new year, reports are encouraging. The Cleveland district, to quote another example, which includes a large part of the farming section of the nation had a good Christmas season that doubled the November performance of the counters, even if gift sales were approximately 4 per cent below the 1946 season. However, counters caught up in January to some extent. They broke even with January 1947 and prospects for the future appear to be good.

The impression to be gained from a reading of the statistical reports and talking to buyers is that stores often failed to make real efforts during the last year to keep their toilet goods departments at high pitch. The tendency has been frequently to let the counters shift for themselves, on the theory that a minor decline does not cause any worry, in view of the high turnover of former years. 1946 is generally looked upon as an exceptional year, inviting a decline as the demand for cosmetics returned inevitably to more normal levels. Profits have been good through the year. Even with their lowered volume many toilet goods counters have shown better returns than during previous years.

However, there is a realization now that such a policy of watchful waiting can not be vary well prolonged forever. An effort must be made to rebuild volume if stores do not want to lose a valuable part of their clientele. The present should be a good time for such a move, because of the general reallignment of customer groupings and the greater availability of the more ready sellers.

Buyers hestitate to say what their plans will be and there is certainly no uniformity of purpose. Some mention the absence of promising novelties as a cause for the comparative lack of counter-interest and point to the correspondingly slow response of the women customers to the "new look." Manufacturers receive their share of the blame. A good novelty that can be dramatized by the industry and the counters would help at this time. Utilities are holding up well. It is the fashion-fringe of the business that fails to make the grade.

Perfumed Snow

There is an old and tried saying that you can't keep a good man down. But there is an element of news in reporting that recently a perfume salesman went aloft to put on a city-wide promotion. In this instance the city was Hartford, Connecticut, and the perfume, as we are told in discreet whispers, was Black Satin.

What apparently happened is that these ingenious promoters arranged with a friend who owned an airplane to shower the city of Hartford with dry ice pellets which were reported to have been previously perfumed. At the same time, small samples which were attached to tags, which in turn would act as kites, gently deposited on the bosoms of the citizens of Hartford tiny vials containing samples of the perfume.

We have often remarked that this industry of ours gives way to no other industry in this country or the world in a contest for imaginative ingenuity.

We have all read that the technicians of General Electric are precipitating rainfall by dropping dry ice on cloud formations, and that these scientists have ventured a guess that under proper climatic conditions they may be able to cause snow to fall in the area of their own selection. But we must certainly give full credit to the member of the perfume industry who decided that if Hartford had to have snow on any given day it might just as well be perfumed snow, and from their viewpoint, it certainly should be a Black Satin snow.

Consumer Panel for Packaging

The increasing importance of the super-market in food marketing has led General Foods into a program of long-range package revision. Formerly packaging style depended on the combined judgment of department executives and reports from the retail selling staff. Now, through organization of a consumer panel, consumer opinion and package research within the organization, will largely determine new packaging developments.

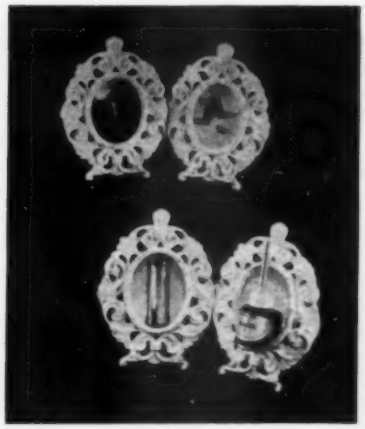
In the Super-Market, General Foods has discovered that of two boxes containing virtually the same product and the same quantity, the one that was taller, narrower and "looked bigger" outsold the shorter, square one. Design and color is a big factor in "impulse buying."

Through the consumer panel, General Foods is discovering that the package should be a source of information. This information should be so helpful in understanding and using the product that the buyer will become a regular customer.

The importance to General Foods of a packaging program better to preserve the product, give it greater sales appeal on the retailer's shelf and to help hold a satisfied purchaser is revealed in the reported sum of $20,000,000 a year spent for packaging.

Charmel's "Magic Wand" is an interesting lip applicator, providing economical application and an even lip line. Refills, easy to insert, are available in six colors.

Shulton presents a masculine deodorant, Early American Old Spice cream deodorant, packaged in a red tube anchored by a wire catch in a red-lined box.



Naylon nail enamel and matching lipstick sit pretty in a little double picture frame. The frames are hinged, have an easel, and may actually be used for pictures.

A La Clam!

If ever a Packaging Museum is established in this country, the drug and cosmetic industry will be a major contributor. In each branch of the industry there are packages of great antiquity as well as many of historical interest. Packages which may be assembled to show an evolution and variety of design, as well as the employment of every imaginable kind of material, and the historical first use of standard packaging materials will be well represented by containers from this industry.

The supply industry, such as importers of essential oils and perfume materials, can contribute interesting containers showing native ingenuity in using local materials or local crafts. The bergamot copper container, once popular for conversion to lamps, the civet horn, the hand-blown glass demijohn for Italian lemon, favorite of wayside antique shops, the Bulgarian rose flask are examples.

Certainly a section should be allowed for the manufacturer who, facing impossible odds, still triumphs with a package which continues to convey his goods, identified with his name to a satisfied customer.

When this happens we will nominate a Chinese maker of cosmetic creams about whom a traveller recently told us. This Chinese cosmetic maker has a substantial business, that is, it would be a respectable size in this country. Yet, he had no containers, no glass, no metal, or paper or ceramic that could be used for his creams.

But in his part of China there are clams, big ones and plenty. So Chinese ladies are now purchasing plenty of creams, with no loss of face or confidence, packaged between the scoured shells of a clam. When better containers are made, this indomitable merchant will probably use them. Meanwhile Chinese ladies are content with Cream a la Clam.

Jean Nate, Inc., will introduce a new packaging of its Bath Bubbles in time for Mother's Day. The new grey ceramic bottle, topped by a black wooden ball, is non-leaking and contains one ounce more than the pottery jug for the same price.

Peggy Sage's Modiste is a good looking lightweight metal case, hinged and covered with simulated leather, which is fitted with a regular size of Shimmer lipstick, matching polish and a miniature bottle of Satinbase.

The Harriet Hubbard Ayer line has been newly designed by Joseph Platt. The objective was to preserve in the packaging the feeling of the fine tradition of the house. The new look is a streamlined but feminine one.

BLUE

stops the eye... starts the sale

PACK TO ATTRACT IN *Maryland Blue*

"Sell Faster"... see other side...

Products packed in BLUE sell faster

NOT just a container—but valuable selling and merchandising features. That's what you get when you pack in rich, royal, "eye-stopping" Maryland Blue Glass. Yes, Maryland Blue has played an important part in the sales success of many famous products. Here's why:

BLUE MAKES YOUR PRODUCT EASIER TO SEE.
BLUE MAKES YOUR PRODUCT EASIER TO REMEMBER.
BLUE MAKES YOUR PRODUCT SMARTLY MODERN.
BLUE INSURES RICH, DISTINCTIVE APPEARANCE.
BLUE STANDS OUT, ASSURES BETTER DISPLAY.
BLUE ADVERTISES YOUR PRODUCT IN THE HOME.
BLUE BUILDS PROFITS, STEPS UP REPEAT SALES.

PACK TO ATTRACT IN Maryland Blue

ALSO AVAILABLE IN CLEAR GLASS

Write today . . . tell us the nature of your product and the sizes in which it is packed . . . and let us send you samples of appropriate stock designs. Or, if you use bottles or jars in large quantities, we'll be glad to create a special design for your exclusive use.

• • •

MARYLAND GLASS CORP.
BALTIMORE 30, MD.

Pictured on the preceding page are just a few of the handsome stock designs. This diagram makes them easy to identify.

1. Cabinet Square - in ½ oz. to 32 oz. sizes
2. Chesapeake Oval - in 4 oz. to 32 oz. sizes
3. Toilet Oval - - - in ½ oz. to 8 oz. sizes
4. Maryland Oval in 1⅞ dram to 32 oz. sizes
5. Squat Jar - - in 2⅝6 dram to 18 oz. sizes

Why a Plaskon Molding Compound is used for these striking Cosmetic Containers

So radiantly beautiful... so stimulating to sales...

because they're

Plaskon Molded Color

These Plaskon Molded Color cosmetic containers are produced by Colt's Manufacturing Company, Hartford, Conn.

● In the highly competitive field of cosmetics, *eye appeal* of containers is a powerful sales factor.

These handsome Colt's containers, made from Plaskon Molded Color, are excellent examples of those producing sales for many world-leading cosmetic manufacturers.

Brilliant, flaming colors . . . delicate, subtle hues . . . Plaskon molding compounds are available in a striking chromatic scale ranging from translucent natural and pure white through pastels to glowing jet black.

Highly important in the use of Plaskon Molded Color for cosmetic containers is the fact that this material is completely resistant to common commercial solvents, and is impervious to the effects of oils, greases and waxes. Molded Plaskon is non-porous, and resistant to dilute acids and alkalies. This plastic material cannot in any way affect the delicate or distinctive aromas of creams, powders, perfumes or other cosmetics.

Plaskon Molded Color is warm to the touch and attractive in appearance, which encourages handling and use of the packaged product.

Thermosetting Plaskon urea- and melamine-formaldehyde molding compounds have a wide range of advantages, that induce greater efficiency in manufacturing and merchandising methods. Our experienced field men are available to help you adapt *thermosetting* Plaskon Molding Compounds to your needs. Write for free book on Plaskon* Molded Color.

*Reg. U. S. Pat. Off.

PLASKON DIVISION • LIBBEY • OWENS • FORD GLASS CO. • 2110 Sylvan Ave., Toledo 6, Ohio

In Canada: Canadian Industries, Ltd., Montreal, P.Q.

PLASKON

TRADE MARK REGISTERED

MOLDED COLOR

Peak of protection....

THE Anchor NKCT Cap provides a uniformly tight and dependable airtight and leakproof seal, giving the Peak of Protection to your products. Its deep-rolled and broadly rounded thread permits smooth spin-on-and-off action. In application, this thread contacts the underside of glass thread and exerts an even sealing pressure on the liner around the complete top of container finish. These features mean uninterrupted production . . . protection of consumer good-will . . . protection through innumerable reseals. Supplied full domed, as pictured, or with flat panel styling.

GIBRALTAR

"The Rock" stands guard over the entrance to the Mediterranean. Truly it is a "Peak of Protection"

Anchor CONTAINERS and CAPS

PRODUCTS OF
ANCHOR HOCKING GLASS CORPORATION
LANCASTER, OHIO

IT'S *Anchor NKCT Caps*
FOR THE PEAK OF PROTECTION

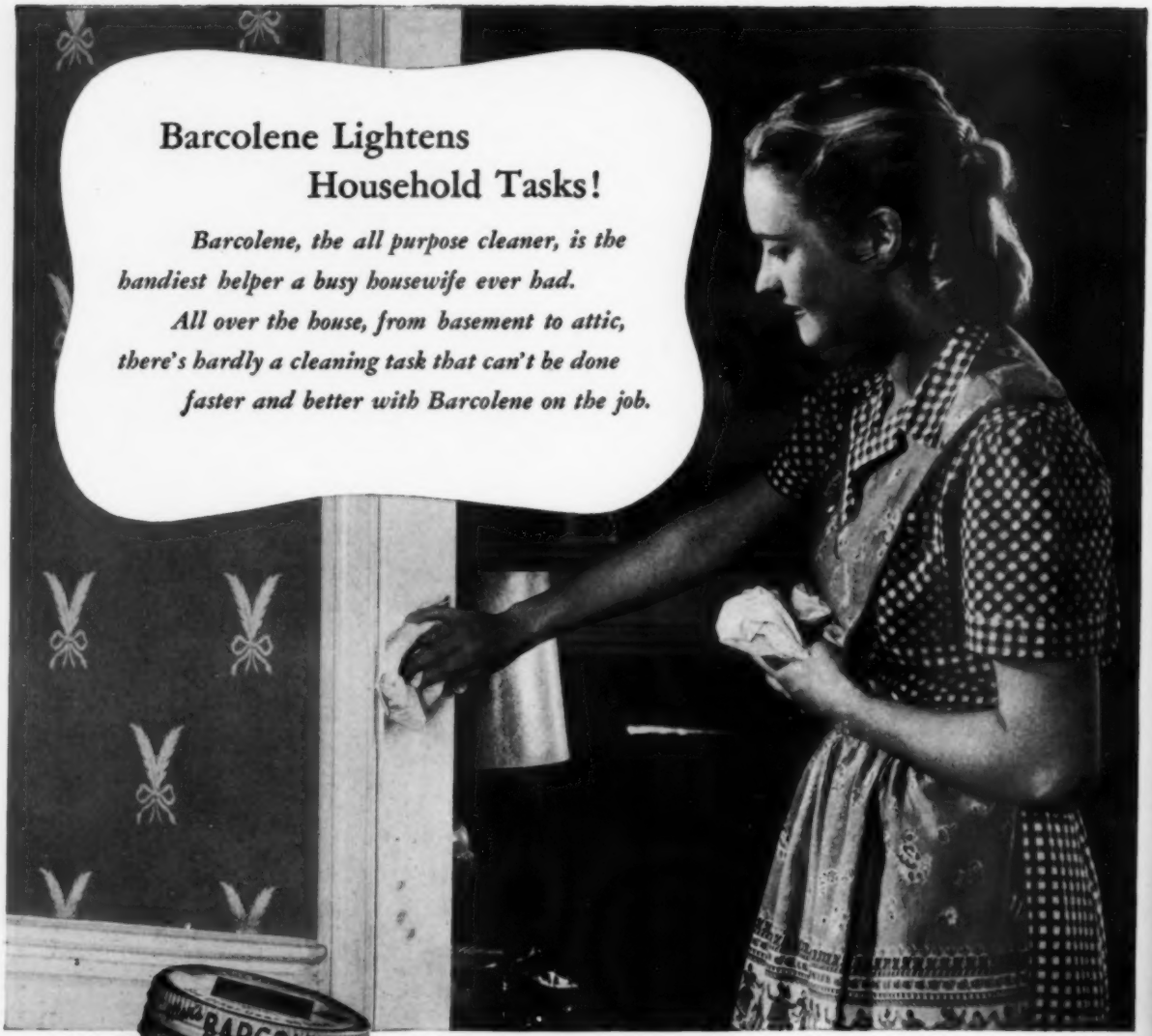
It's *Glass* for consumer preference...

SURVEY after survey shows that consumers prefer products packed in glass. They prefer glass because it protects, is clean and sanitary —has no seams to rust, corrode or leak—imparts no foreign elements to contents. They prefer glass because it is convenient . . . easy to open and reseal, prevents evaporation—permits safe storage of unused portions in the original container. They prefer glass because it is transparent—affords a visual inventory. Why not pack your products in glass and take full advantage of this consumer preference?

Anchor
CONTAINERS and CAPS

PRODUCTS OF
ANCHOR HOCKING GLASS
CORPORATION
LANCASTER, OHIO

AND IT'S *Anchorglass*
FOR MAXIMUM CONSUMER PREFERENCE


Barcolene Lightens
Household Tasks!
Barcolene, the all purpose cleaner, is the handiest helper a busy housewife ever had.
All over the house, from basement to attic, there's hardly a cleaning task that can't be done faster and better with Barcolene on the job.

Closure-wise manufacturers, like the G & G Products Co., Inc. of Boston, makers of Barcolene, turn to Crown Screw Caps with confidence. They recognize the value of full thickness in liners and liner materials that have been developed to seal efficiently on specific types of products. They know that Crown precision manufacture pays off in trouble-free application and dependable sealing. And of course Crown Screw Caps have the exclusive Deep Hook Thread construction, which gives greater sealing pressure without binding on the glass threads of the containers. In addition to these mechanical advantages, the Crown Screw Caps used on Barcolene cleaner have the sales advantage of attractively lithographed two-color design with full skirt decoration. Crown Cork & Seal Co., Baltimore 3, Md. *World's Largest Makers of Metal Closures.*

CROWN CLOSURES

Approved by millions of housewives

SCIENCE...GUARDIAN OF QUALITY*

BERNARDIN
Metal Closures

At Bernardin, Science has increasingly taken command in doing things better and faster. . . Here scientific men, working in laboratories, have perfected machines and practices that often do in mere seconds and with micrometrical accuracy, what required hours to do crudely before. Bernardin closures today, represent literally a triumph of research and invention! Bernardin Bottle Cap Company, Evansville, Indiana.

* Pictured—*Checking accuracy of a finished Bernardin master thread die against template using an Optical Comparator.*

Since 1881—America's First Manufacturer of Metal Closures

Uncanny Facts
Canned food still good after 92 years!
Canned food left by an English explorer in 1852 was discovered in the arctic in 1944. The cans had resisted repeated heavy freezes and thaws; their contents were still wholesome!
Free insurance for every employee!
Continental provides employees with liberal life insurance, benefits for surgical operations, and weekly sickness and accident benefits!
What do people eat in the arctic?
In the desert? In other far-off spots: Surprisingly enough, they eat well-balanced foods – thanks to the convenience and safety of cans. Standards of eating have been immeasurably raised by the miracle of canned foods – and we are proud of the part we play in this great industry.
Continental also makes plastics, fibre drums, paper cups and containers, and bottle caps. More reasons why we say "the bigger the family ... the better the service."
Lunch is served – on the job!
Mono cups were used for first all-paper in-plant feeding 20 years ago. Today, 9 million workers eat on the job. (Mono cups are made by Continental.)
Old superstition exploded!
The United States Department of Agriculture says it's perfectly safe to leave food in an opened can. (Just keep the can cool and covered.)
The bigger the family...
CONTINENTAL CAN COMPANY
the better the service

We'd like to add a P.S. to this ad, now running in national magazines. It's this. In your field, Continental's outstanding with its wide variety of sizes and types of containers.

These include: Round, oval and oblong cans with various styles of sifter closures—attractively lithographed with your own design.

to the Buyer of Cartons

At the production level, the package is an important part of the picture . . . able to add to or subtract from efficient handling and filling. At the sales level, the package is often the whole picture . . . in that it's all a customer sees until after a purchase is made. The carton buyer who prefers Ridgelo Clay Coated Boxboard assures the satisfaction of both his production and sales staffs . . . through Ridgelo's smoothness, strength and uniformity in the first case, through its cleaner, brighter and more appealing appearance in the second case. What you get is what you ask for in Ridgelo . . . for it's *custom-made* to perfectly fit your particular design, printing and filling requirements.

Ridgelo
CLAY COATED
BOXBOARDS

MADE AT RIDGEFIELD, N. J.
BY LOWE PAPER COMPANY

*custom-made FOR THE INDIVIDUAL PROCESS, INKS, DESIGNS, COLORS AND FINISH.

REPRESENTATIVES:
H. B. Royce, Detroit • Norman A. Buist, Los Angeles • A. E. Kellogg, St. Louis • Philip Rudolph & Sons, Inc., Philadelphia

THE DIVERSIFICATION OF *New Perfection* DROPPING PARTS

Simplifies Your Packaging Problem

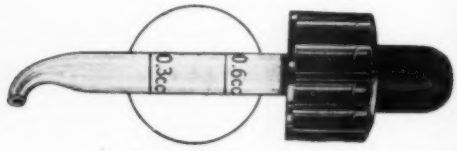
The wide variety of sizes, styles and colors in New Perfection's complete line of dropping parts offers the answer to your packaging problem. Each component part is designed to present and administer your product in the most attractive, convenient manner. We supply dropping parts to fit your bottles or furnish complete with bottles.

1

Non-rolling, extra-depth, Bakelite cap; thick-flange rubber bulb; Saftee-ball glass.

3

Regular plastic cap; thin flange rubber bulb; semi-blunt glass.



2

Non-rolling, extra-depth, Bakelite cap; thick flange rubber bulb; CALIBRATED, special bent glass.

4

Metal cap; AMEKINE oil-resisting rubber bulb; blunt glass.

New Modernistic bottle. Designed to lie flat for convenient labeling. Oval front provides ample label space.

RUBBER BULBS

are supplied in many styles and colors. Non-swelling AMEKINE synthetic rubber is used for oil preparations; natural rubber is supplied for other products.

CAPS

of plastic or metal can be furnished in a complete range of sizes and colors.

DROPPER GLASSES

are available in a wide variety of styles and sizes; plain or CALIBRATED in any color to mark specific dosages.

BOTTLES

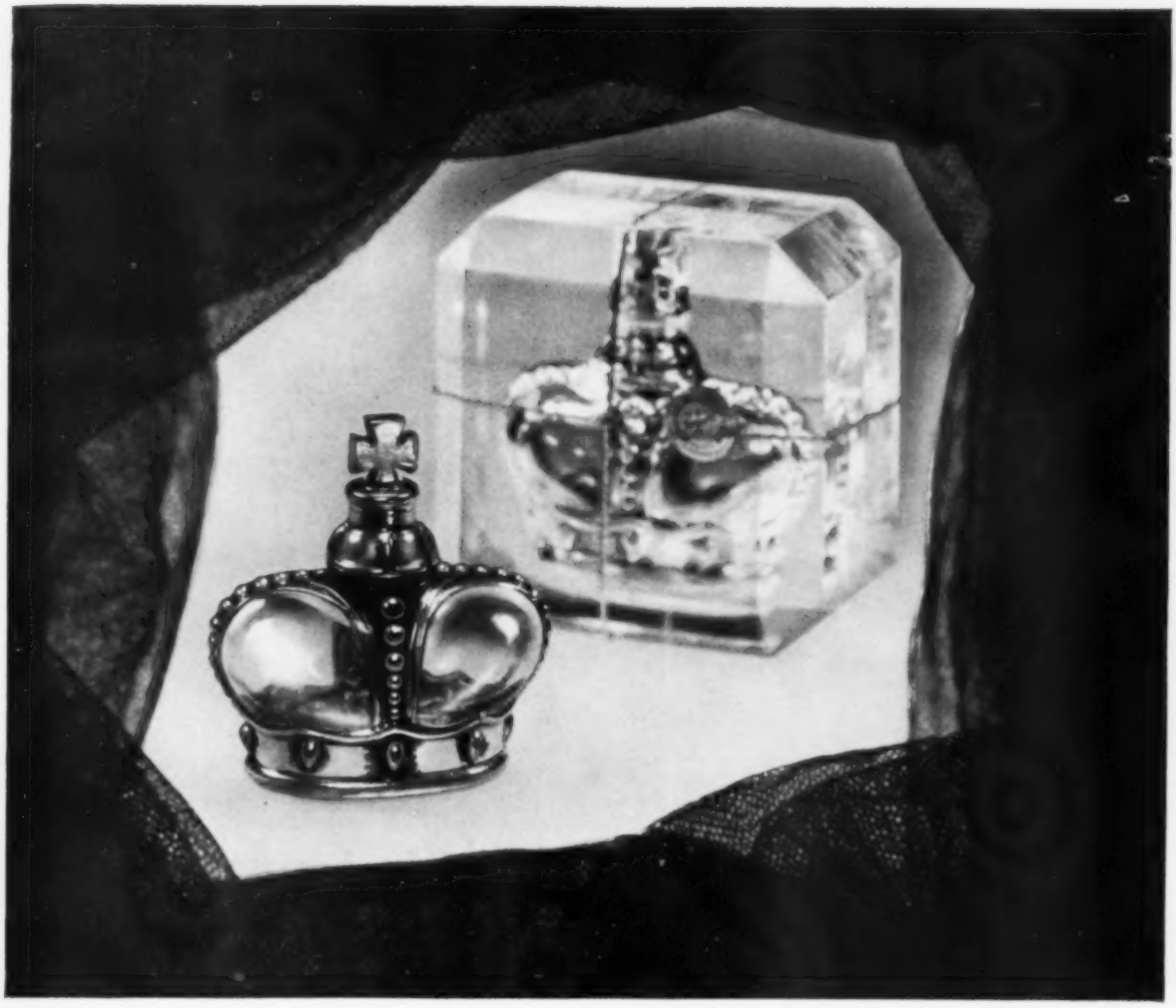
in an attractive modernistic style in Amber, Blue, Green or Clear glass are available, with dropping parts, in the following sizes: 2 cc, ⅛, ¼, ½, 1 and 2 oz.

Write for Samples and Quotations

PENNSYLVANIA GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

428-432 NORTH CRAIG ST. • PITTSBURGH (13) PA., U.S.A.



The flattery of fine glass...

individualized for your product

"CROWN JEWEL" FOR PRINCE MATCHABELLI is a typical example of Kimble's ability to reproduce exquisite creative art in practical containers of universal appeal.

Here is gem-like fine glass . . . precisely matched to the most subtle details of the Prince Matchabelli design.

Here is the flawless result of dozens of Kimble techniques...polished bases and facets, ground stoppers, varied appliqué of metal and color. Kimble craftsmanship in glass containers is unexcelled anywhere in the world.

Such a distinctive package can be your best salesman . . . and quite possibly the least expensive! If your product *is* individual, it can afford to have . . . and *should* have . . . a Kimble individualized glass container.

• • •

Kimble can now produce your private mold containers in any form and quantity, on regular schedule.

SPECIFY KIMBLE FOR ASSURANCE OF CONTAINER QUALITY

KIMBLE GLASS TOLEDO 1, OHIO

Division of Owens-Illinois Glass Company

Aluminum Tubes Hold Up Longer

"Does it hold up in shipping and service?" Ask that question about the tube you're planning to use. It *will*—if it's made of Alcoa Aluminum. Here's why:

An aluminum collapsible tube will stand twice as much internal pressure as a comparable tube of competitive metal.

Requires no clips; a twofold crimp in an aluminum tube is twice as strong as similar closures in other tubes.

Aluminum tubes have more tensile strength, are less likely to split . . . have greater resistance to fatigue and puncture.

Think it over! Wouldn't your product do better in aluminum tubes? The Alcoa Packaging Laboratory can help supply the answer, with no cost or obligation to you. Just send a sample of your product to ALUMINUM COMPANY OF AMERICA, 1913 Gulf Building, Pittsburgh 19, Pennsylvania.

Package it in Aluminum

GREATER STRENGTH
NON-TOXIC
SMART APPEARANCE
EASY DISPENSABILITY
GOOD ECONOMY
LIGHT WEIGHT

ALCOA

BRIDGEPORT

Metal Cosmetic Containers

Caps and Closures

Perfume and cosmetic manufacturers for more than a quarter of a century have recognized the precision craftsmanship of Bridgeport Metal Cosmetic Containers.

The consistent uniformity and beauty of our products has resulted in many leading manufacturers remaining as consistent users of Bridgeport Metal Containers.

When you are again planning a product that requires an original design be sure to examine the fine precision and decorative beauty of Bridgeport Products.

Bridgeport Produces

- Vanities
- Jar Caps
- Bottle Caps
- Lipstick Containers—Swivel, Slide, Automatic
- Dry and Paste Rouge Cases
- Powder Boxes
- Perfume Vial Cases and Caps
- Lip Brushes
- Drawn Talc Containers
- Miscellaneous Make-up Cases and Other Metal Specialties

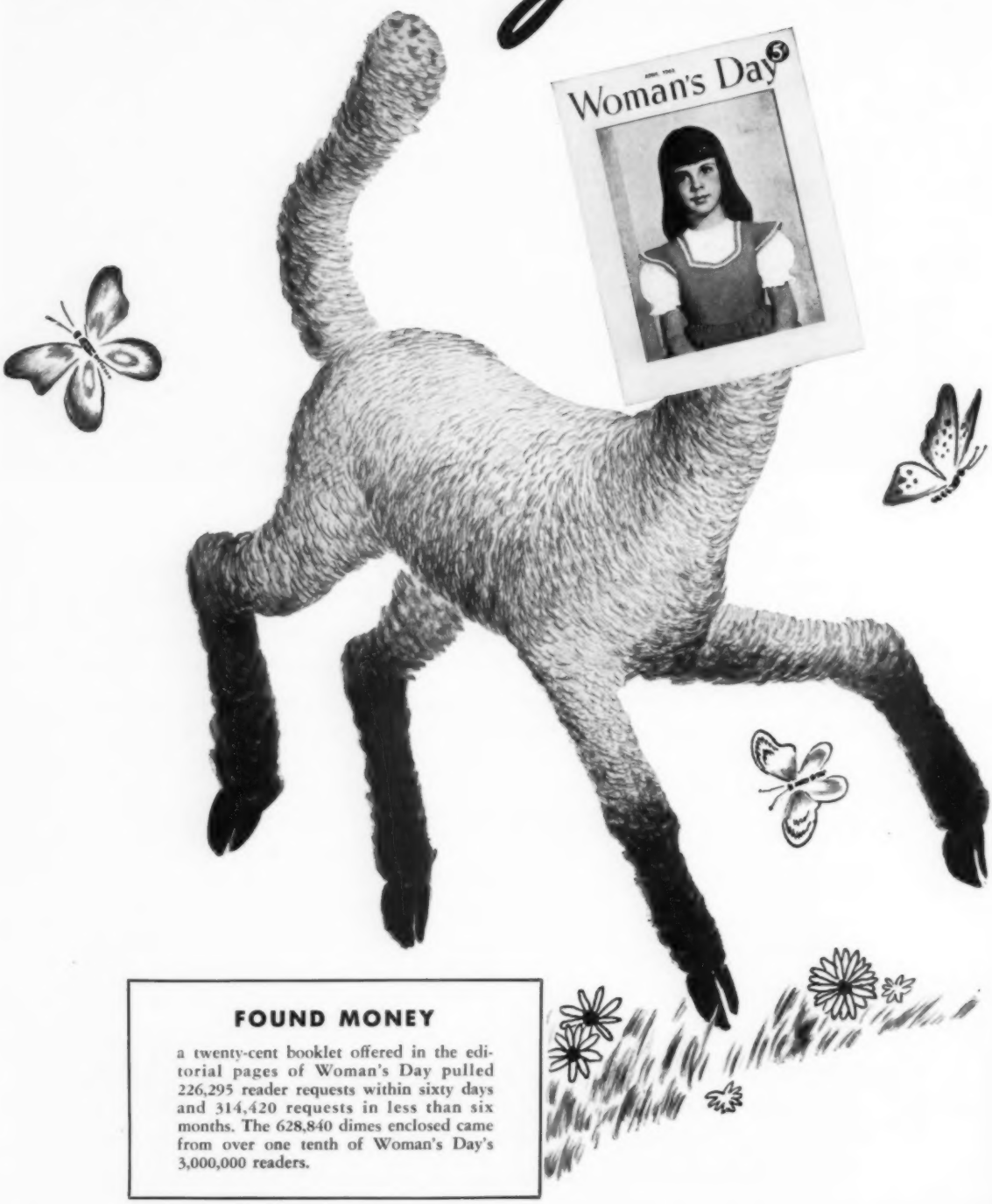
THE BRIDGEPORT METAL GOODS MFG. CO.

Established in 1909

BRIDGEPORT, CONN.

PHONE: BRIDGEPORT 3-3125

We said "Gambol" ...



FOUND MONEY

a twenty-cent booklet offered in the editorial pages of Woman's Day pulled 226,295 reader requests within sixty days and 314,420 requests in less than six months. The 628,840 dimes enclosed came from over one tenth of Woman's Day's 3,000,000 readers.

...not "Gamble!"

You don't have to be a student of the laws of mathematical probability to get a true picture of the potential in Woman's Day.

Here, for the advertising, is a disposable income of $11,637,000,000 destined to be spent this year by our more than 3,000,000 housewives and mothers, to satisfy the generous living standards of the 11,400,000 members of their collective families.

$ 94,000,000 for Toilet Articles and Preparations
$108,000,000 for Drug Preparations and Sundries
$ 32,000,000 for Ophthalmic Products and Orthopedic Appliances
$205,000,000 for Medical and Dental Services
$ 94,000,000 for Personal Services

In Woman's Day you won't be gambling in your attempts to reach her eye and ear. For Woman's Day, at the lowest page rate per thousand of any women's service magazine, enjoys the greatest single copy sale of any magazine in existence...testimonial to a virile editorial technique that, without advertising inducement, has pulled more than 600,000 reader letters and 700,000 requests for instructions in a single year.

Advertisers who count costs court women who count pennies

because buying is a woman's business:

a Woman's Day is never done *selling!*

THE A&P MAGAZINE

Exceptional density, uniform opaqueness, a white that's truly white . . . these are the qualities you find in CARR-LOWREY OPAL JARS.

CARR-LOWREY GLASS CO.

Factory and Main Office: BALTIMORE 3, MD. • *New York Office:* 500 FIFTH AVENUE • *Chicago Office:* 1502 MERCHANDISE MART

with a new look...

and a new lock...

SCOVILL offers your sales a leap-year lift

For your information, Lady Consumer is using a new non-squash Scovill lipstick container and a Scovill compact whose embossed cover carries no less than seven colors.

*Have Us Tell You About Recent Scovill Developments**

such as—a new type of lipstick container with a positive locking device *that is practically invisible*... new means of achieving intricate designs (spiral, quilted effects, for example) *mechanically and at reasonable cost*... new processes for applying *unusual and multi-color finishes* on embossed designs... new methods of applying colors to *a variety of materials*, inviting the development of designs that are applicable to an entire line of cosmetics. It is for such highly-regarded reasons that

the majority of the brands in leading stores have SCOVILL-MADE containers

*May our representative have the privilege of consulting with you about your requirements. Just phone or write... SCOVILL MANUFACTURING COMPANY, Drug and Cosmetic Container Division, 63 Mill Street, Waterbury 91, Connecticut.

AVAILABLE

IN POPULAR SIZES—

these four outstanding stock bottles

Here's the short cut to smart packaging—an artistically designed Swindell stock bottle plus your distinctive label.

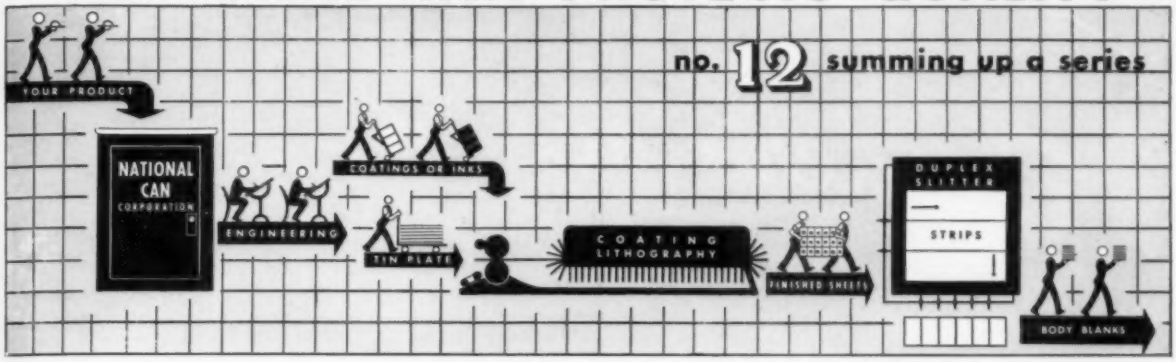
Shown here are four of the many stock bottles available for quick delivery in popular sizes ranging from 1/8 ounce to 16 ounces.

SWINDELL BROS., BALTIMORE, MD.
200 FIFTH AVENUE, NEW YORK
ROBERTO ORTIZ, HAVANA, CUBA

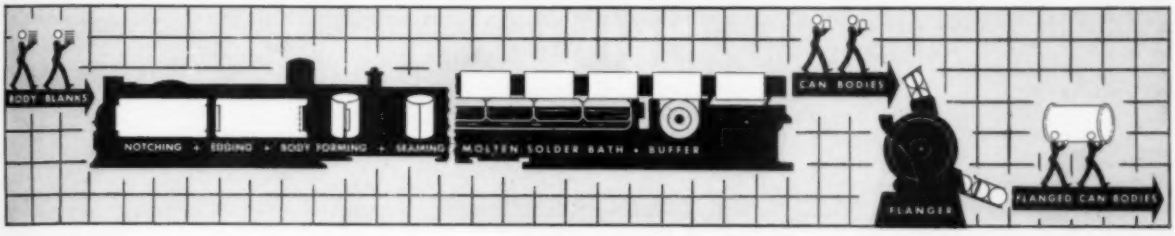
When you think of bottles think of

Swindell

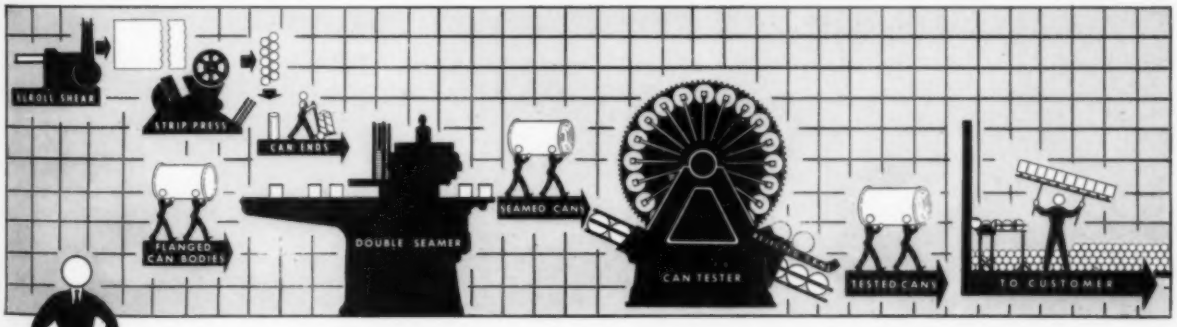
FROM DESIGN TO DELIVERED PRODUCT
NATIONAL CAN PROTECTS QUALITY



.. ITS ENGINEERING AND ART SERVICES ARE AT YOUR DISPOSAL . . . IT MAINTAINS HIGH PROTECTIVE COATING AND LITHOGRAPHING STANDARDS . . . SLITTING METHODS INSURE UNIFORM BODY BLANKS



. . . ITS CAREFUL BODY FORMING HELPS MAKE TIGHT UNIFORM CONTAINERS . . . ITS THOROUGH SIDE-SEAMING INSURES TIGHTNESS . . . IT FLANGES CAN BODIES UNIFORMLY ON BOTH ENDS . . .



. . . THE WAY WE MAKE CAN-ENDS IMPROVES PACKERS' OPERATIONS . . . DOUBLE SEAMERS PRODUCE UNIFORMLY TIGHT SEAL . . . TESTING AUTOMATICALLY REJECTS ALL BUT AIR-TIGHT CANS . . . CAREFUL HANDLING AND PACKING PROTECT CANS ALL THE WAY ITS PERSONALIZED SERVICE HELPS CUSTOMERS IN THEIR OWN PLANTS

Reprints of this entire series can be obtained upon request.

NATIONAL CAN
CORPORATION

Executive Offices: 110 EAST 42nd STREET, NEW YORK 17, N. Y.

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Broder does it again

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BRODER

LIPSTICK CASE

SENSATION

Wholly different from anything ever made

LOOKS BETTER...

WORKS BETTER...

COSTS LESS

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INCORPORATED

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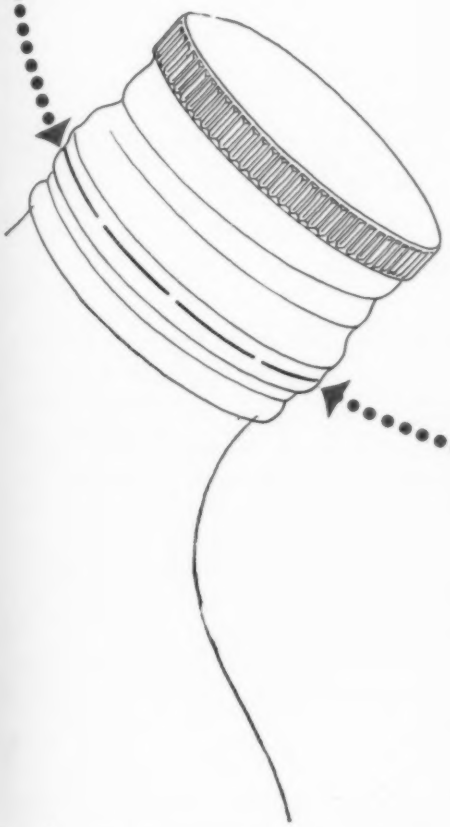
The seal that says "you're first"!

You can provide an *extra* margin of safety for your product by switching to Alseco Pilfer-Proof Caps. It's the attached locking ring that gives customers your guarantee of original quality. Once it is broken, it can't be replaced. Both longer-lasting aluminum cap and locking ring are rolled-on each individual bottle to make a perfect fit. Write for details about Alseco Pilfer-Proof Caps.

"Tailor-Made" to Fit Each Bottle

Under controlled pressure, the unthreaded cap is held down tightly on the sealing surface, embedding the lip of the bottle firmly into the cap liner.

While the cap is held down tightly on the bottle, rollers move in and *roll-on* the threads and pilfer-proof locking ring, using the bottle threads as a guide.



TAILOR MADE OF ALCOA ALUMINUM

ALSECO SEALS

AND SEALING MACHINES

ALUMINUM SEAL COMPANY, INC. • RICHMOND, INDIANA • SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

#A-4289 is a cosmetic bottle—ideal for leg make-up . . . the Empress closure is the choice whenever the good looks of a package are important.

PERFECTLY MADE-UP. . .

Your product in the exactly right Duraglas Container!

A sparkling, attractively made-up package catches the customer's eye—wins your beauty product a place on her dressing table.

Our stock drug, chemical and toiletry line includes more than 1400 Duraglas containers! Each is a dependable protector, an efficient, economical package, a flattering background for your distinguishing label!

Among these functional containers you should find one that's made-to-order for your product's special requirements—the right shape, the right size, *the right look!*

After you've selected the container that fills your needs, choose an O-I closure that will be the finishing touch to a package that protects, beautifies—*and sells!*

Duraglas CONTAINERS—Protectors of Quality

OWENS-ILLINOIS GLASS COMPANY, TOLEDO 1, OHIO Branches in Principal Cities

NEWS...

Daggett & Ramsdell Bought

Purchase of the cosmetic business of Daggett & Ramsdell has been announced. The purchasers are William J. Perridge, of Conti Products Corporation, who becomes president, Arthur A. J. Weglein, John J. Hardy and Joseph J. Fishler.

WILLIAM J. PERRIDGE

Mr. Weglein stated that the name of the company will be changed to Daggett & Ramsdell, Incorporated.

Dargavel on Advisory Board

John W. Dargavel, executive secretary of the National Association of Retail Druggists, has been named a member of the executive committee to serve in an advisory capacity in connection with a conference on public health to be called by Oscar R. Ewing, federal security administrator, in accordance with instructions from President Truman. Dr. Dargavel is one of the 35 leaders invited to assist in development "of feasible national health goals for the next ten years."

Garizio, Research Supervisor

John E. Garizio has joined the technical department of Sheffield Farms Company, Inc., as research supervisor. His responsibilities include the development of new milk chemical products for pharmaceutical uses.

Dr. Woolley Honored by APMA

Dr. Dilworth Wayne Woolley, 33 years old and totally blind, who has been regarded as one of the most prominent contributors in the field of human nutrition, was awarded the American Pharmaceutical Manufacturers' Association research award for 1948, at the Association's meeting April 12, in Havana.

Scher in New Sear's Post

Sears, Roebuck and Company, have made known the appointment of Victor H. Scher as head of its drug merchandising department in Chicago.

Prior to his new assignment, Mr. Scher served for three years as retail sales manager of the parent drug department. He joined Sears in 1931.

Proom Starts Own Service

Robert W. Proom associated with Shoup-Owens, Inc., Hoboken, N. J., for the past twenty years, has inaugurated his own packaging service. The office will be located at 130 W. 42nd St., New York.

Schering Staff Promotions

The promotion of several members of the Schering Corporation professional service staff has been announced.

Ralph C. Najarian has been appointed hospital supervisor for the domestic central division.

Herman E. Birr has been transferred to a newly-created position in the foreign sales division.

Max A. McDaniel has been transferred to the professional service department. Two representatives, Richard Rychel and Moncure Taliaferro are being trained in sales supervision in the home office.

Botty Made V. P.

I. A. Botty, who has directed the export activities of the U. S. Vitamin Corporation since 1940, has been elected vice-president.

Lever Bros. Buys Luxor Line

The Luxor cosmetic business has been purchased from Armour & Company, by Lever Brothers Company.

Sales of the business, which grosses between $1,511,000 and $2,000,000 annually, becomes effective July 1, 1948, after which Lever Brothers Company will market such Luxor items and at such prices as it will then determine.

The Luxor business will be carried on the Pepsodent division of Lever Brothers Company in Chicago. This expansion marks the second entry of Lever Brothers into the cosmetic field.

Berle Named Asst. Works Mgr.

Colonel Charles H. Berle, whose appointment as assistant works manager of the Isco Chemical division, Niagara Falls, a division of Innis, Speiden and Company, has been announced by W. H. Sheffield, president of Innis, Speiden.

COL. CHARLES H. BERLE

Wellbrock to Head Sales for N. J. Mach.

At the annual meeting of the board of directors of the New Jersey Machine Corporation, Richard Wellbrock, sales-manager was elected vice-president in charge of sales.

Drug Producers Meet June 7-10

Robert B. Magnus of Magnus, Mabee & Reynard, Inc., has been named general chairman of the entertainment committee for the thirty-sixth annual meeting of the American Drug Manufacturers' Association to be held in the Mount Washington Hotel June 7-10, Bretton Woods, N. H.

Other members of the committee are M. N. deNoyelles, vice-chairman, Chas. Pfizer & Company, and A. Wassercheid, honorary chairman, Mallinckrodt Chemical Works.

WITH A REPUTATION FOR QUALITY AS SOLID AS THE OAK BOLE

THE OAK MOSS
of Bruno Court
is offered exclusively by
NAUGATUCK

Straight from one of the largest producers of Oak Moss in Grasse, known the world over, we offer to you the following types from which to select your own requirements:

Resinoid Moss "S" B-11

Resinoid Moss "S" Light Colored B-366

Resinoid for Extracts Oak Moss B-327

Resinoid for extracts Oak Moss Light Colored B-874

Absolute Mousse de Chene B-30

Absolute Mousse Benzol B-651

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BRUNO COURT, S. A., Grasse, France • C.A.P.P., Casablanca, Morocco

Felton Chem. Co. in New Quarters

Felton Chemical Company, Inc., moved into its new quarters adjoining its existing group of buildings April 5.

Dr. Griffith Re-elected

At the annual meeting of the members of the Philadelphia College of Pharmacy and Science held April 5, Dr. Ivor Griffith was re-elected president of the institution.

Abbott Labs. Elections

All directors and officers of Abbott Laboratories were re-elected at the annual stockholder and board meeting. The directors are: Alfred W. Bays, Dr. Joseph F. Biehn, George R. Cain, Edgar B. Carter, S. DeWitt Clough, Charles S. Downs, Edmund L. Drach, Raymond E. Horn, Edward A. Ravenscroft, Edward H. Ravenscroft, Hugh D. Robinson, James F. Stiles, Jr., Floyd K. Thayer, Claude A. Thornburg, Elmer B. Vliet, Dr. E. H. Volwiler and Ferdinand H. Young.

Maltine Company Moves

The Maltine Company has moved to new quarters in Morris Plains, N. J. Administrative officers have moved to Morris Plains but a New York office is to be maintained at 330 W. 42nd St.

Miller Named to Glycerine Post

J. Malcolm Miller has been appointed acting secretary of the Association of American Soap and Glycerine Producers succeeding Roscoe C. Edlund.

A.I.C. Silver Anniversary

The Silver Anniversary meeting of the American Institute of Chemists will be commemorated at a meeting on May 7 at the Waldorf Astoria, New York.

New Ertel Laboratory

The Ertel Engineering Corporation, Kingston, N. Y., announces a new laboratory to test all batch material to verify results of the finished product.

Renick Joins Compact Firm

Kotler & Kopit, manufacturers of compacts, have made known the appointment of Charles Renick as assistant to George Kopit, director of sales. He will make his headquarters at the company's offices at 303 5th Ave., New York.

Dougherty Succeeds Stokes

F. J. Stokes, founder and president since 1895 of the F. Stokes Machine Company, has become chairman of the board and is succeeded in the presidency of the firm by Francis Dougherty.

FRANCIS DOUGHERTY

Mr. Dougherty has been with the company since 1928, and preceding his election as president was secretary-treasurer.

de Meneval to Visit Here

M. Francois de Meneval, Paris representative of the firm of Dodge & Olcott, Inc., 180 Varick St., New York, and a partner of Bories & de Meneval S. A. R. L. Paris will visit his associates and friends in this country. He plans to arrive in New York May 10, and can be reached by appointment at Dodge & Olcott's offices.

Mr. de Meneval will remain in New York for three weeks during which time he will be in conference with D&O officials in regard to further expansion in the distribution of D&O products in France.

Industrial Pharmacy Course

To meet the growing demand for men technically trained in pharmaceutical manufacturing, 10 officials of national drug manufacturing companies met with the members of the faculty of the St. Louis College of Pharmacy to chart a unique new curriculum in industrial pharmacy. The new five-year course opens in September 1948.

Declaring that the new course is designed to help the acute shortage of men trained in the processes of industrial pharmacy, Robert L. Lund, president of the college, said a $35,000 manufacturing laboratory will be installed to give students practical instruction in drug manufacture.

Pointing out that the students in the new course will not be graduated before 1952 or 1953, Lund said the college plans to meet the current shortage by offering post graduate courses to students now at the school and to pharmacy graduates. This course also starts in September 1948.

OTS Bibliographies

Forty-four special bibliographies of technical reports and documents in various industrial fields which have been prepared for the convenience of business men and researchers, are available free of charge from the Office of Technical Services, Department of Commerce.

Among the fields covered by these special bibliographies are: Chlorine, fats and oils, soaps and detergents, etc. Requests for copies of the bibliographies should be addressed to Reference Section, Office of Technical Services, Department of Commerce, Washington 25, D. C.

Arnold-Hoffman Acquires Ohio Plant

Arnold, Hoffman & Company, Inc., Providence, announce the acquisition of the business of the Harkness and Cowing Company of Cincinnati.

At the same time the company made known the election of Wilder H. Haines as a director, Rufus A. Healy, a vice-president and Clarkson Taylor, assistant treasurer.

The business of Harkness and Cowing was founded in 1855, and has long been in the manufacture of stearic acid, red oil and crude glycerine.

Clymer Promoted by Smith, Klein & French

Harold A. Clymer has been appointed administrator of the research laboratories of Smith, Klein & French Laboratories. Mr. Clymer has been with the firm since 1939, and was in charge of technical administration.

Amie Products Moves

Amie Products, Inc., has moved its plant to larger quarters at 1 Pleasant Ave., Clifton, N. J. The company will maintain an office in New York at 15 Park Row, where all correspondence should be addressed.

Sheldon Named Mgr. of Saron Corp.

Robert Sheldon has been named vice-president and general manager of the Saron Corporation. Before joining Saron, Mr. Sheldon was with Revlon Products Corporation.

Edwards Joins Glyco Products

Leonard J. Edwards has joined Glyco Products Company, as chemical engineer. He previously was works manager of Naylee Chemical Company, Philadelphia.

Proprietary Assn. Meeting

The Proprietary Association will hold its convention May 24-26 at the Hotel Claridge, Atlantic City.

Karl Voss Corp. Expands

Shoup-Owens, Inc., Hoboken, N. J., has purchased the equipment and assets of Leigh, Inc., Hackensack, N. J., for use by the Karl Voss Corporation, division of Shoup-Owens, Inc.

Two Made V. P. of Nat. Starch

Herbert C. Piel and Donald D. Pascal have been elected vice-presidents of National Starch Products, Inc.

Additions to Amer. Pharm. Asso. Staff

The council of the American Pharmaceutical Association announces the appointment of Harold V. Darnell, B.Sc., and Eleanor Poland, Ph.D., as assistants to the secretary of the Association.

Fruit & Syrup Mfgr's to Meet

The thirty-first annual meeting of the Fruit and Syrup Manufacturers Association will be held May 27, at the Pennsylvania Hotel, New York.

This group is headed by Ira S. Brightman, president and John S. Hall, corresponding secretary.

Library Started by Cosmetic Chemists

The formation of a central library of books, periodicals and general information relating to cosmetics and perfumery is being started by the Society of Cosmetic Chemists.

Members of the committee are: chairman, Edward Sargin, advertising manager of Givaudan-Delawanna, Inc.; Florence Wall, consulting chemist and author; and Frederick J. Rowse of the technical staff of Norda Essential Oil and Chemical Company.

Schultz Heads CSC Pharm. Research

Commercial Solvents Corporation has announced the appointment of Dr. Fred H. Schultz, Jr., as director of pharmaceutical research.

DR. FRED H. SCHULTZ, JR.

Under the direction of Dr. Jerome L. Martin, director of research, Dr. Schultz will supervise all research in pharmacology and all exploratory chemical research leading to the development of new pharmaceutical products.

Rubey in New Post

James T. Rubey has been named director of personnel for Rexall Drug Company's Pacific Southwest region. He replaces Clifford H. Marker, resigned.

Dr. Weyer Joins Chas. Pfizer

Elliott R. Weyer, associate director, division of patent management, Research Corporation has joined the scientific staff of Chas. Pfizer & Company, Inc.

Wilson Named Prod. Manager

James A. Wilson, has been appointed production manager of Monsanto Chemical Company's Merrimac division. Mr. Wilson is succeeded as plant manager by Russell L. Miller, plant superintendent.

Dr. Smith with American Druggist

Dr. Austin Smith, secretary of the Council on Pharmacy and Chemistry of the American Medical Association, has been appointed science editor of American Druggist magazine.

Department of Commerce Reorganized

The former Health Products Division of the Department of Commerce, headed by Thomas W. Delahanty, has been combined with Charles C. Concannon's Chemical Division and is now referred to as the Chemical and Health Products Branch of the Office of International Trade. Mr. Concannon was designated as chief and Mr. Delahanty became associate chief, and chief of the Health Products Section. For administrative purposes it was decided to decrease the number of commodity divisions from sixteen to nine, and to refer to them as "branches" of the Commodity Division.

Kasdan Acquires Compact Stock

Majestic Metal Specialties, Inc., manufacturers of compacts, whose plant is located at Moosup, Conn., announced that all of its outstanding stock has been acquired by Nathan Kasdan, its president.

The annual dinner for members of the Druggists Supply Corporation tended by Magnus, Mabee & Reynard, Inc., at the Hotel Pennsylvania, New York, March 6. The guest speaker was Cyril Lander, president of the National Drug & Chemical Company of Canada, Ltd.

ADVERTISEMENT—*This entire page is a paid advertisement* *Prepared Monthly by U. S. Industrial Chemicals, Inc.*

U.S.I. CHEMICAL NEWS

April ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1948

First 'Grain Itch' Outbreak In Baltimore Stopped by Aid Of New Insecticide Material

Piperonyl Butoxide Used To Control Insect Mite

The owner of a local broom factory in Baltimore, Maryland, recently called on the City Health Department's Division of Industrial Hygiene for aid in controlling a peculiar rash that had suddenly appeared among his employees. The rash was described as itching intensely for about 24 hours, and appeared only on the clothed portions of the body, chiefly about and above the waist. It resembled chickenpox to some extent, and remained on the skin for a week or ten days after exposure.

Example of Medical Detection

Tracking down the cause of this dermatitis

CAUSE OF MYSTERIOUS MALADY affecting Baltimore industrial workers was tracked down with aid of U.S.I. entomologists. A U.S.I. chemical brought about complete control of the disease.

was a remarkable example of medical detection. Examination of the symptoms suggested to the Health Department's dermatologist that the outbreak might be the rare "grain itch," described in Ormsby's "Diseases of the Skin," and caused by the insect mite known as *Pediculoides ventricosus*.

At this stage of the investigation, the Bureau of Industrial Hygiene called in a leading entomologist attached to the insecticide research laboratory of U.S.I. in Baltimore. With the aid of this expert and his assistants, the mites were identified as those described by Ormsby — and it was also found that the Angounois grain moth, one of the normal hosts for the parasitic mite, was present as well. The insects were apparently brought into the plant on broom corn which probably became infested in a freight car previously used to transport grain.

Control Measures Taken

Upon identification of the cause of the outbreak, the plant

MORE

THE AMERICAN HYDROCARBON SYNTHESIS: IV

American Version of Hydrocarbon Synthesis Replaces Older Methods

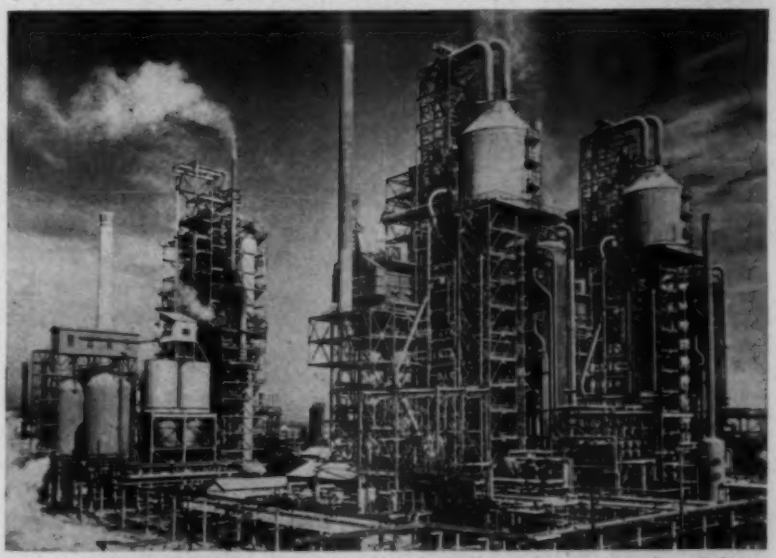
Improvements Permit Production of Oxygenated Chemicals, Fuels at Costs Competitive With Other Processes

To American engineering skill, we owe the conversion of "hydrocarbon synthesis" from intricate intermittently operating units to large continuous ones—from the removal, regeneration and recharging of a catalyst to its continuous reactivation — and from operations that were wasteful of manpower to operations susceptible to automatic control. Improvements permit the production of fuels and oxygenated chemicals at costs competitive with other sources. Oxygenated chemicals from the American hydrocarbon synthesis — alcohols, ketones, and acids — will be made available by U.S.I.

Takes Clue From Petroleum Engineers

A large part of the technological deficiencies in the older method has been eliminated in the American hydrocarbon synthesis process by stealing a page from the petroleum engineer's notebook. In catalytic cracking, our petroleum refiners faced the problem of bringing gaseous material in contact with solid catalysts while adding heat to the reaction rather than removing it — a problem faced by chemical engineers in dealing with the hydrocarbon synthesis. Problems of uniform gas distribution over the catalyst, uniform temperatures, prevention of "hot spots," and catalyst regeneration troubled them, too. In solving these puzzles, they made a notable contribution to chemical technology — the Fluid Catalyst Technique. This technique has been applied to the hydrocarbon synthesis reaction and, although much has been written concerning the technique itself, a brief

MORE



CLUE TO IMPROVED HYDROCARBON SYNTHESIS was found in catalytic cracking plants. Taking a leaf from the petroleum engineer's book, American chemical engineers adapted the "Fluid Catalyst Technique" to hydrocarbon synthesis . . . helped make the method competitive with others.

New Method for Synthesis Of Alkylmalonic Esters

A procedure is reported in a recent issue of an American scientific journal for the condensation of oxalic esters with fatty acid esters up to stearic. Up to the time of publication, condensation of oxalic esters with fatty acids up to only butyric acid had been described.

In the current study, it is found that by removing by-product alcohol in Claisen condensations involving ethyl oxalate, and by adjusting the relative amounts of ethyl oxalate to fatty acid ester in these reactions, it becomes possible to obtain excellent yields of alpha-ethoxalyl esters. These esters are thermally decarbonylated to give high yields of alkylmalonic esters.

Rapid Sulfate Assays

The availability of pure tetrahydroxyquinone points the way to more rapid sulfate determinations, it was announced recently. This chemical is an indicator in the volumetric determination of sulfates by direct titration with barium chloride solutions. Tetrahydroxyquinone was formerly not generally available.

ADVERTISEMENT—*This entire page is a paid advertisement*

April ★ **U.S.I. CHEMICAL NEWS** ★ 1948

Methionine Protects Rats Against Liver Poisoning

Damage to rats' livers produced by diets containing pyridine may be avoided by the application of DL-methionine, it was announced in a scientific paper published recently. The paper, the third in a series exploring the mechanism of liver and kidney injury, adds further data to the growing body of proof concerning the detoxifying action of methionine. With increased production by U.S.I. of low cost synthetic DL-methionine, in addition to a newly announced price cut, the product has become available for bulk shipments for pharmaceutical manufacturing and commercial consumption.

New Convenient Sizes

Solox, U.S.I.'s popular proprietary alcohol-type solvent for general use, is now packaged in two new sizes: quarts and pints. The quart containers are supplied to dealers in cases of 24, the pint containers in cases of 48.

CONTINUED 'Grain Itch' Outbreak

was sprayed with piperonyl butoxide, one of U.S.I.'s new insecticides which is deadly to insects, but harmless to all warm-blooded animals. The use of piperonyl butoxide rapidly destroyed the insects, completely eradicating the disease.

CONTINUED Hydrocarbon Synthesis

description is warranted.

Fluid Catalyst Technique

The technique derives its name from the "fluidization" of solid particles. When finely ground catalyst is suspended in a gas stream, the particles are carried along with it. They can be moved as suspensions through pipes and valves, and held in reaction and catalyst reactivation chambers as a turbulent — "boiling" — mass with the appearance, and some of the properties, of a liquid. Reacting gases are used to carry the catalyst powder upward into the large cylindrical catalyst chamber or reactor. The solids can be separated from the reaction products by a cyclone separator through which pass the produced gases. Heat is removed by cooling water tubes, but these, because of the improved heat transfer due to turbulence, can be larger and fewer.

But the catalyst must be reactivated by burning off the carbon which forms. To do this, the catalyst is drawn continuously from the reactor into a stream of pre-heated air which carries it to the reactivator. The reactivator is a large cylindrical vessel like the catalyst chamber, and the "fluid" solid is in the same turbulent state. In both cases, the "boiling" catalyst bed eliminates "hot spots," saves equipment, and results in more uniform product. Catalyst regeneration is continuous and is accomplished without dismantling of equipment, or removing and recharging catalyst. Capacity per unit is multiplied many times.

Adapt Iron Catalyst

To the Fluid Catalyst Technique, American engineers have adapted an iron catalyst for the synthesis reaction. This material possesses properties which make it a great improvement over the German catalyst. It has greater mechanical strength, and, of most importance, a greatly reduced cost. Moreover, its use results in the production of oxygenated chemicals.

Rot-Resistant Cotton

The best means yet discovered for protecting cotton fabric and yarn from mildew and other forms of rot is to convert part of the fiber chemically to cellulose acetate, similar to acetate rayon, it was reported recently by a government research bureau.

TECHNICAL DEVELOPMENTS

Further information regarding the manufacturers of these items may be obtained by writing U.S.I.

A new coating compound for spray booths is said to form a continuous white coating to which overspray adheres. To clean the booth, the coating plus adhered paint is easily removed by scraping, or by flushing with hot or cold water, the manufacturer states. **(No. 305)**

A new refrigeration sealer, described as odorless, resilient, moisture- and vapor-proof, and sufficiently pliable to resist normal impact and torque action, is claimed to be useful on all types of food cabinets and refrigeration equipment. **(No. 306)**

A "photo plastic" that can be cast in chunks from 10 to 20 times larger than any other resin of this type, can be molded and cut into exact models of industrial tools or machine parts, then tested under stress to aid in the design of machinery. A unique alleged property of this plastic is that it "freezes" stress patterns. **(No. 307)**

A non-curling carbon paper is claimed to be over one-third stronger than the ordinary carbon paper, and to possess greater moisture resistance and flexibility. **(No. 308)**

Resins made from cashew nuts are described in a new booklet. The resins are alleged to be useful for laminating, waterproofing, for friction fortifiers in brake linings and clutch facings, and for many other industrial applications. **(No. 309)**

To determine the friction qualities of yarn, a new lubricity tester has been placed on the market which is claimed to establish the quantitative relationship between coefficient of friction and abrasion resistance. **(No. 310)**

A new non-injurious cold paint stripper, claimed to remove paints, lacquers, enamels, synthetics, and wrinkles almost instantly, is said to require no neutralizing action other than wiping with a rag. **(No. 311)**

To determine the presence of carbon monoxide, a new instrument has been developed which requires no special training to use and is capable of indicating the presence of carbon monoxide from 0.001 to 0.10 per cent by volume in air, according to the manufacturer. **(No. 312)**

A pocket alarm watch, no larger than the ordinary pocket watch, contains an accurate bell-alarm which may find wide use in industry, the makers state. **(No. 313)**

To detect small amounts of oxygen in organic compounds, a new apparatus has been invented. It is said to make use of the decomposition of a weighed sample by heating in an atmosphere of oxygen-free helium. **(No. 314)**

U.S.I INDUSTRIAL CHEMICALS, INC.

60 EAST 42ND ST., NEW YORK 17, N. Y. U.S.I. BRANCHES IN ALL PRINCIPAL CITIES

ALCOHOLS
Amyl Alcohol
Butanol (Normal Butyl Alcohol)
Fusel Oil—Refined

Ethanol (Ethyl Alcohol)
Specially Denatured—all regular and anhydrous formulas
Completely Denatured—all regular and anhydrous formulas
Pure—190 proof, C.P. 96%
Absolute
*Super Pyro Anti-freeze
*Solox proprietary Solvent

***ANSOLS**
Ansol M
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ACETIC ESTERS
Amyl Acetate
Butyl Acetate
Ethyl Acetate

OXALIC ESTERS
Dibutyl Oxalate
Diethyl Oxalate

PHTHALIC ESTERS
Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate

OTHER ESTERS
*Diatol
Diethyl Carbonate
Ethyl Chloroformate
Ethyl Formate

INTERMEDIATES
Acetoacetanilide
Acetoacet-ortho-anisidide
Acetoacet-ortho-chloranilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloranilide
Alpha-acetylbutyrolactone
5-Chloro-2-pentanone
5-Diethylamino-2-pentanone
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Alpha-Oxalpropionate
Ethyl Sodium-Oxalacetate
Methyl Cyclopropyl Ketone

ETHERS
Ethyl Ether
Ethyl Ether Absolute—A.C.S.

FEED CONCENTRATES
Riboflavin Concentrates *Vacatone 40
*Curbay B-G *Curbay Special Liquid

ACETONE
Chemically Pure

RESINS
Ester Gums—all types
Congo Gums—raw, fused & esterified
*Araplaz—alkyds and allied materials
*Arofene—pure phenolics
*Arochem—modified types
Natural Resins—all standard grades

OTHER PRODUCTS
Collodions Ethylene
Ethylene Glycol Urethan
Nitrocellulose Solutions DL-Methionine
Insecticide Materials Insectifuge Materials

Printed in U.S.A.

Chem. Market Research Assn. Meeting

Representative of 120 American and Canadian chemical companies met in Boston April 8 for a joint session on chemical market research sponsored by the Chemical Market Research Association and the Massachusetts Institute of Technology.

Organized for development of economical uses of America's chemical resources, the association for the first time in its history held a joint session with a University. The association cooperates with various government agencies in clarifying the types of information which are most helpful in appraising trends in the chemical and related industries.

O'Connor Re-Elected Vitamin Group President

Basil O'Connor, national chairman of the American Red Cross, has been re-elected president of the National Vitamin Foundation it has been announced by Dr. Theodore G. Klumpp, Winthrop-Stearns, Inc., retiring chairman of the board of governors. Raymond E. Horn, Abbott Laboratories, was named vice-president, and A. H. Fiske of Eli Lilly & Company, succeeded Dr. Klumpp, in the new slate of officers elected during the Foundations annual meeting.

Salesmen's Assn. Elections

The Salesmen's Association of the American Chemical Industry has elected officers to fill those offices made vacant by recent resignations. They are as follows: President, James G. Park; vice president, Albert Loeffler; treasurer, Charles V. Douglas. Directors are: Harold C. Green, Robert L. Hutchins and G. W. Poland, Jr.

CSC to Spend $2,000,000 for Expansion

Henry E. Perry, president of Commercial Solvents Corporation has announced plans for an extensive expansion of the research and development department at Terre Haute, Ind. Two million dollars will be spent for new buildings and equipment.

The program calls for more than doubling the size of the present research building, construction of a new bacteriological pilot plant unit, a separate building for a high-pressure research pilot plant, and an addition to the pharmacological laboratory.

Dow Booklet

A technical service bulletin entitled "Ethocel Hotmelts for Paper Coatings." The Booklet contains descriptions of these hotmelts, how they are applied and the properties obtained when used on papers, packages, etc.

The Booklet may be obtained by writing to the Coatings Section, Plastics Division, The Dow Chemical Company, Midland, Mich.

Dr. Rosell Joins S.K.F.

Dr. Socrates F. Rosell, of Santiago, Cuba, has joined the staff of the advertising department of Smith, Kline & French Inter-American Corporation as a medical copywriter. Dr. Rosell was formerly a member of the faculty of the Instituto del Vedado, Havana.

Lili Perfumes Distributed Here

Lili Perfumes, Bermuda, are now being distributed in the U. S. market. The U. S. distributor is Neal Gordon, Gambine Company, 52 Vanderbilt Ave., New York 17.

Baker Named to Chesebrough Board

Clifford M. Baker has been elected to the board of directors of the Cheesebrough Manufacturing Company. Mr. Baker is chairman of the board of Pond's Extract Company and vice president of Lamont, Corliss and Company.

Trilsch Company Moves

Oscar Trilsch Company announces the removal of its New York office and showroom to new quarters at 366 Fifth Ave., New York.

Helen Herchelroth

Mrs. Helen Herchelroth, wife of J. Hilary Herchelroth died February 21 following a prolonged illness.

Mrs. Herchelroth was associated with her husband in developing Oracle Laboratories and other business interests for over a period of fifteen years, and during that time made a wide circle of friends in the industry.

New Chief of V.A. Pharm. Admin.

Archie E. Millis has been appointed assistant chief of the Veterans Administration pharmacy division. Before assuming his new position in the VA central office in Washington, Mr. Millis was chief of the pharmacy division in Atlanta.

Nielson Honored by Denmark

Carl Nielson, associate director of research at Abbott Laboratories, has been made a knight of the Order of Dannebrog by Frederick IX, King of Denmark.

Mr. Nielson's honor was conferred upon him in recognition of his work in promoting closer relationships between Denmark and the United States, especially in the scientific and pharmaceutical fields, and in aiding Danish scientists to recover from the effects of the German occupation.

Cutter Promotes Sandberg

T. Robert Sandberg, superintendent of penicillin production at Cutter Laboratories has been promoted to Works manager of that organization.

Mr. Sandberg, who has been associated with the biological firm for the past two years, was superintendent of chemical production prior to his last position.

Ricketts With Merck

M. M. Ricketts has joined Merck & Company, Inc., as special assistant to commercial vice president James J. Kerrigan. Mr. Ricketts will make his headquarters at the Rahway plant.

Walsh Joins Dabney Chem.

J. Glennon Walsh has joined the Dabney Pharmacal Company as director of sales. Mr. Walsh was formerly sales manager of the pharmaceutical division of G. Barr & Company, Chicago.

Pfizer Elections

At the board of directors meeting of Chas. Pfizer & Company, Inc., the following officers were re-elected: George A. Anderson, chairman of the board; John L. Smith, president; John E. McKeen, vice president; Fred J. Stock, vice president; Albert A. Teeter, vice president; Elmer C. Otto, vice president and assistant secretary; Louis M. Timblin, treasurer and assistant secretary; John L. Davenport secretary and assistant treasurer.

Wargell Joins Strong Cobb & Co.

Walter F. Wargell has joined Strong Cobb and Company, Inc., as director of the professional products division.

Dr. Spoor With Bristol-Myers

Dr. Herbert J. Spoor has been appointed assistant director of the medical division of Bristol-Myers Company.

• Large-volume production of ascorbic acid has long been an important part of the essential vitamin program at Chas. Pfizer & Co., Inc.
And it's good business judgment to use a source of supply which has established, maintained and added to a reputation for the manufacture of high quality products.
Decades before vitamins were known as such, high quality fine chemicals were being supplied by Pfizer to manufacturers of pharmaceuticals.
The Pfizer name was built by safeguarding the brand names of its customers' products. So, whether it's Vitamin C or one of more than a hundred items, you can back it with your business goodwill if you see the Pfizer Quality label.
Chas. Pfizer & Co., Inc., 81 Maiden Lane, New York 7, N. Y.; 444 West Grand Avenue, Chicago 10, Illinois; 605 Third Street, San Francisco 7, Calif.

PFIZER

PFIZER QUALITY

Manufacturing Chemists Since 1849

6042

New President for Rexall of Canada

John R. Kennedy, for the past 12 years president of the Rexall Drug Company, Ltd., of Canada, has been elevated to the position of chairman of the board and Gerald F. Bullock has succeeded him in his former post.

Mann Transferred

Edmund Mann of the Dow Chemical Company's Cleveland office, has transferred to Dow's St. Louis division, where he will assume duties as general chemicals salesman in that area.

Monsanto Appointment

The appointment of Prescott Sandidge as assistant director, with responsibility for administrative matters, has been announced by Dr. Carroll A. Hochwalt, vice-president and director of the central research department of Monsanto Chemical Company. Mr. Sandidge was formerly at Oak Ridge, Tenn., where he was executive director of the Clinton National Laboratories, operated by Monsanto for the Atomic Energy Commission.

Amer. Pharmaceutical Assn.

Troy C. Daniels general chairman of the 1948 meeting of the American Pharmaceutical Association has announced that the Association will hold its meeting in San Francisco, August 8-14.

Murtha Heads Charities Drive

William F. Murtha of Bloomingdale Brothers, Inc., has been named chairman of the Cosmetics, Drugs and Allied Industries division of the Cardinal's Committee for the 1948 fund appeal for the New York Catholic charities.

T. G. A. 1948 Convention

The convention committee of the Toilet Goods Association, headed by Karl Voss reports that the meeting will be held at the Waldorf Astoria Hotel, New York, beginning Tuesday, May 18 extending through the afternoon of Thursday, May 20.

Dwyer to Represent Chem. Ind.

E. W. Dwyer, of Monsanto Chemical Company, has been selected as a representative for the Chemical Industry conference of the International Labor Organization in Paris.

Mr. Dwyer is one of the two management representatives chosen from the chemical industry to represent the U. S. at the conference.

Ind. Chem. Issues Booklet

A 48-page, fully illustrated booklet entitled "Precipitated Calcium Carbonates" has been released by the Industrial Chemical Sales Division, West Virginia Pulp and Paper Company.

Written by Robert H. Buckie, the booklet records data concerning precipitated calcium carbonates, products of Industrial Chemical Sales. Copies may be obtained from the Division's offices 230 Park Ave., New York.

CIBS Elect Officers

The CIBS (Cosmetic Industry Buyers and Suppliers) organized to provide a meeting ground for the younger salesmen and purchasing agents of firms concerned with the Cosmetic Industry has named its officers: President, Arthur A. Mulligan, Lehn & Fink Products Corp.; vice-president, Paul W. Alexander, Drug & Cosmetic Industry and H. Conklin, The Werner G. Smith Company, secretary.

Dr. Matthews Advanced

Dr. Frederic Matthews has been named director of research for the Merrimac division of Monsanto Chemical company.

Dr. Parran Steps Down

Retiring Surgeon General Thomas Parran in making his final report reported that the total death loss for 1946, the latest year tabulated was down. Dr. Parran listed as number one killer, heart disease, with cancer as runner-up.

Bristol Lab. Changes

Several changes in the sales and advertising department of Bristol Laboratories, Inc., have been announced.

Richard C. Dalby, formerly head of the sales promotion department, becomes district sales manager with headquarters in Atlanta.

John J. Mulcahey, formerly assistant advertising manager, has been named head of the sales promotion department, and Arthur J. Davidson has joined the company as assistant advertising manager.

Lloyd Joins Bombi, Inc.

Jack Lloyd has joined Bombi, Inc to take charge of Pacific Coast sales Mr. Lloyd recently was with Windsor House, Ltd., and prior to that was with the Geo. W. Luft Company.

West Coast Packaging Exp.

The First Western Packaging Exposition and Conference on Packaging will be held in the San Francisco Civic Auditorium, August 10-13, 1948.

Bischoff Appointments

The creation of new executive positions at the Ernst Bischoff Company Ivoryton, Conn., has been announced by H. G. Terwilliger, president.

Carl Truebe has been appointed first vice-president and general manager. Edward K. Harvill, vice-president and director of research, and Quindaro S. Ball, vice-president and general sales manager.

Shown in a huddle at a meeting of drug manufacturers on behalf of the United Jewish Appeal Campaign are (left to right) Charles Blackman, Supreme Pharmaceutical Co., S. Malkin, Mal-Art, Inc., Nate Shapero, chairman of the UJA Drug and Cosmetics Division and William Fellner, Maryland Paper Products, Inc.

Marschalk Elected President

The directors of the Alfred D. McKelvy Company, have elected H. Robert Marschalk to the office of president, succeeding Hugh D. McKay who becomes chairman of the board.

Mathieson Chem. Co.

The Mathieson Alkali Works, after having been known by that name for 56 years, has changed its name to Mathieson Chemical Corporation.

McKesson & Robbins Appointment

R. L. Hanson, vice-president of McKesson & Robbins, Inc., has been appointed to the Eastern regional staff as assistant to the regional vice-president.

Changes in Commercial Solvents Tech. Service

Dr. Frank E. Dolian has been appointed assistant manager of Commercial Solvents Eastern technical service division in New York and A. M. Cooke covers the New England territory for the division.

Correction

In the March issue we printed an item about the retirement of Robert Emmett Desmond as manager of the San Francisco branch of George Lueders & Company, stating that he has served a mere 17 years with the company. Seems that we were slightly in error by about 18 years in regard to Mr. Desmond's length of service, because he joined the firm in 1913 which gives him thirty-five years of service as the many friends he has made in that period of time can testify. We join these friends and officers of the company in wishing Mr. Desmond years of good fishing and happiness.

Mr. Desmond is succeeded as manager by Paul L. Cooley, who has been with the company for seventeen years (that's where we got the 17 mixed up with Mr. Desmond.)

Friedman Heads Lakeside Chem. Div.

Harris L. Friedman, has been appointed chief of the chemistry division, Lakeside Laboratories, Milwaukee. He was formerly director of pure research for Pyridium Corporation.

Atlas Promotes Mulford

Kenneth E. Mulford has been appointed general manager of the industrial chemicals department of Atlas Powder Company.

S. K. F. Seminar

Dr. Robert Gesell, Professor of Physiology at the University of Michigan Medical School, spoke at a seminar of the research division of Smith, Kline & French Laboratories, March 12. Dr. Gesell, one of the country's outstanding physiologists, has had an SKF grant since 1946, working on cholinergic physiology.

Tarplin Appointed Dir. of Advertising

E. M. Tarplin has been appointed director of sales promotion and advertising of Marvin R. Thompson, Inc., Stamford, Conn.

Mr. Tarplin formerly was with American Home Products leaving that company in 1945 to accept a post with William R. Warner as director of professional service.

Farer in Research Post

I. L. Farer, previously chief chemist at Halliwell, Inc., has joined Caryl Richards, Inc., as director of research.

Dr. Frascati Delivers Paper

The American Society of Perfumers met March 17 at the Advertising Club in New York to hear Dr. A. T. Frascati of the research department of Firmenich & Co., Geneva, Switzerland present a paper on "Irone Research."

LeVant in New Post

Jack I. LeVant has been appointed sales manager of the wholesale division of Toni Company, hair preparations. Mr. Le Vant was formerly vice-president of the New York division of McKesson & Robbins, Inc.

Acquires Chemical Concern

McClanahan Oil Company, Grand Rapids, has acquired controlling interest of the Great Lakes Chemical Corporation, it has been announced by Charles S. Hale, president of both companies.

Monteleoni Named Export Mgr.

The Syntomatic Corporation has announced the appointment of Leo Monteleoni as export manager.

Mr. Monteleoni first came to this country during the war, commanding the Italian submarine Dandalo on a mission for the U. S. Navy. For his work on this mission he received a recommendation from Admiral Nimitz.

Treemond Co. Reorganized

Sydney M. Ehrlich organizer of The Treemond Company, 153 Waverly Place, New York, has acquired the interests of two former associates, and will remain as head of the reorganized company.

Brand Names Award

A name in shampoo which was introduced to American women more than a century ago was the oldest brand name to be cited by Brand Names Foundation, March 30 with a certificate of public service. The product is "Amani" manufactured by Prichard & Constance, Inc., Bloomfield, N. J., since 1831.

Warner Company Donation

The William H. Warner Company, has donated 50,000 Thera-Vita capsules to American Relief for Italy for distribution to the needy people of Italy, it has been announced by Dominic J. Marcello, executive director of ARI, Inc.

Tri-State Convention

The Tri-State Cosmetic Association has announced the 1948 toilet goods show will be held in the Netherlands Plaza Hotel, Cincinnati, from August 30 to September 3.

Hygrade Labs. Moves

Hygrade Laboratories, Inc., research products division of the Hygrade Food Products Corporation has moved to new quarters at 44 St. Francis St., Newark, N. J.

New Plant Acquired by Continental Can.

The Continental Can Company, Inc., has purchased one of the former Wright Aeronautical plants in Paterson, N. J. The property consists of three buildings totaling more than 700,000 square feet of floor space.

Paul Goedrich

Dr. Paul Goedrich, sixty-one, the chemist who developed a new series of sulfa drugs, died at his home March 15.

A native of Vienna, Dr. Goedrich taught at the University there and founded an institute for research in Munich in colloidal chemistry. He came to America in 1928 and since 1938 he has been a research chemist at Rutgers College of Pharmacy.

Buckwheat in the three flower stage used in the processing of Rutin

Research Indicates Wider Use of Rutin

Experimental clinical studies indicate therapeutic application *other than* treatment of capillary fragility associated with hypertension

For some time, Rutin has been produced by Baker on a large scale production basis. The specifications for Rutin (Baker) are as follows:

Rutin (Baker), on a moisture free basis, contains not less than 95% of the flavonol glycoside Rutin and not more than 5% quercetin — extracted from carefully dried, selected buckwheat. Rutin (Baker) is a yellow, microcrystalline, stable powder containing less than 0.002% of chlorophyll and less than 0.0002% of the red pigment of buckwheat.

Clinical tests have shown that Rutin may prove valuable in the treatment of hemorrhagic diseases, but the routine use must await full and detailed clinical studies.

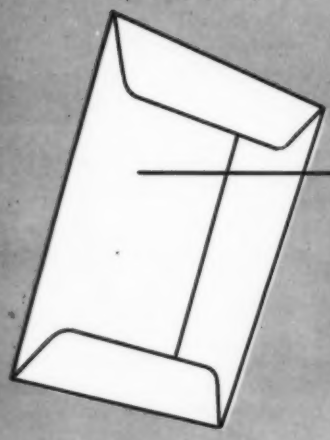
If you plan to market any dosage form of Rutin, Baker asks the opportunity of quoting prices and placing a Rutin bibliography in your hands. Address your letter to: *Fine Chemical Division,* J. T. Baker Chemical Co., Phillipsburg, New Jersey.

RUTIN BULLETIN AVAILABLE

Rutin has been found to be therapeutically valuable in the treatment of capillary fragility associated with hypertension. It has been estimated that there are in this country about 5 million or 6 million people who have hypertension. In this group there is evidence of widespread incidence of increased capillary fragility. Be sure to write for Rutin bulletin and bibliography.

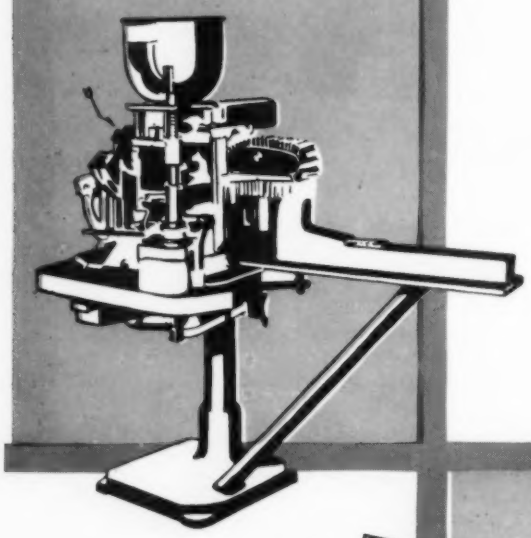
Baker's Chemicals

C. P. ANALYZED • FINE • INDUSTRIAL



Packet YOUR PRODUCT!

Drug and cosmetic manufacturers, well posted on consumer buying trends, have added Brown packets to their packaging of dry free-flowing products. Brown packets, displayed on counters, racks, and cards, move rapidly in outlets where regular sized packages leave your prospects cold. They have proved their worth time and again as introductory samples attached to larger packages.



Brown Packets will fit every one of your packaging design specifications. Send us an order with trademark, color, and directions for use, and a small amount for packeting suggestions.

BROWN BAG FILLING MACHINE CO., INC.
FITCHBURG, MASSACHUSETTS
MANUFACTURERS OF OPEN END ENVELOPES, PACKETS AND PACKAGING MACHINERY
West Coast Representatives — Peter D. Bowley & Assoc., 210 Mississippi St., San Francisco, Calif.

New Developments in Medicinal Agents
Part II

(*Continued from page 469*)

Metopryl

Metopryl is the name coined for an isomer of ethyl ether known as *n*-propyl methyl ether. It possesses an anesthetic effect 25 per cent greater than that of ether and has no harmful effects on the heart, liver or circulation. It is a volatile, colorless liquid with a pungent odor and a boiling point of 39°C. Its pungent odor does not allow for its use in open or semi-open systems. When used as an induction agent it is less offensive to the patient than is ether and it does not irritate the respiratory tract as much. However, it is not preferable to cyclopropane, Vinethene or nitrous oxide. Further work is necessary on this compound to evaluate it completely. It is supplied by Ohio Chemical and Manufacturing Co.

Para-aminobenzoic Acid

Another war-research medical development is the use of para-aminobenzoic acid in the therapy of certain Rickettsial diseases such as typhus, spotted fever and tsutsugamushi disease. It appears to act as a rickettsiostatic agent rather than as a rickettsoicidal agent. It has been shown to inhibit the multiplication of the rickettsiae. In clinical use it is assumed that the immunity mechanisms of the host finally overcome the infection, the progress of which is arrested by the para-aminobenzoic acid. The drug is given orally or by intramuscular injection in doses varying with the disease and the patient. When the powdered acid is administered orally it should be given in a 5 per cent solution of sodium bicarbonate to prevent acidosis and nausea. If given as the sodium salt the bicarbonate is not necessary. Although para-aminobenzoic acid is not the sole answer in these conditions it is an important specific adjuvant along with proper supportive therapy. It is marketed as PABA and Sodium PABA by International Vitamin Division, American Home Products Corp. and by Wyeth Inc.

Pneumococcus Polysaccharides

Prevention of the most common types of pneumonia is now possible with the availability of a vaccine. A single subcutaneous injection of this immunizing agent builds resistance to the most prevalent types of pneumococcal or lobar pneumonia. Immunity usually develops within two weeks and is effective for at least a year. No adverse reaction has been observed from the vaccination. The vaccine is of no value in the treatment of a person already ill with pneumonia nor does it provide immunity against the virus pneumonia. The vaccine is a solution of the polysaccharides of the pneumococci. It is produced from the capsule surrounding the organism. This capsule consists of a viscous sugar-like substance which chemically is polysaccharide. Injection of this substance produces the protective antibodies. Of the 75 types of pneumococcus isolated 11 are responsible for 75 to 80 per cent of all pneumococcal or lobar pneumonia. Six of the 11 are responsible for pneumonia in adults and the other 5 plus 1 of the adult group are particularly common in children.

This vaccine has recently been made available as Solution of Pneumococcus Polysaccharides (Type-Specific) by E. R. Squibb and Sons. Combination A contains types 1, 2, 3, 5, 7 and 8 for adults and B contains types 1, 4, 6, 14, 18 and 19 for children. The dosage for adults and children over 12 years of age is 1 cc. subcutaneously injected, and for children under 12 the dose is 0.5 cc.

Hyperimmune Whooping Cough Serum

The only officially approved human serum for the treatment of whooping cough has recently been announced. It is manufactured from the blood of highly selected male donors in whom a high degree of immunization is built up. A whooping cough vaccine is injected into the donor and later a pint of blood is withdrawn and then processed into the serum. The immunization lasts for only a few weeks but is highly effective. It is stronger than other serums developed from individuals who have recovered from the disease. As a result of this serum the whooping cough death rate in children under six years of age has been reduced from 25 per cent to 8.2 per cent. The serum is available from the Serum Exchange of the Children's Hospital of Philadelphia where it was developed.

Methergine

Methergine, known chemically as *d*-lysergic acid-*dl* hydroxybutylamide-2, is a new synthetic ergonovine-like substance. This compound has one more methylene group than ergonovine. It has a potent oxytocic action and has been used in labor. No toxic effects have been noted when administered either intramuscularly or intravenously. Administration of the drug effectively shortened the third stage of labor and reduced the postpartum blood loss. A rapid and more prolonged action on the uterus was observed when it was administered in doses of 0.2 mg. in 1 cc. of solution. Sandoz Chemical Works is supplying this drug for clinical trial.

Tantalum Oxide

In previous articles mention was made of the use of the element tantalum in surgery. A new development in this field is the use of tantalum oxide type 400 as a dusting powder in surgery. It is non-toxic and chemically inert and therefore can be used instead of guaze and sterile vaseline gauze in surgical wounds. The powder is thought to absorb blood, lymph or tissue juice and forms a crust and thus accelerates healing. This powder is prepared by the Fansteel Metallurgical Corp.

Etamon

Tetraethylammonium chloride is a quaternary ammonium compound. It acts by blocking the transmission of both sympathetic and para-sympathetic nerve impulses at the autonomic ganglia. As a result

Put that "plus value" in your products by using ROWAG AA...the Lanolin that puts QUALITY into your creams and ointments.

ROWAG AA is free from impurities and has a consistently high cholesterol content (15% to 16%). It is an exceptionally effective skin softening agent and emolient and has clear color and clean odor. As a powerful emulsifier and emulsion stabilizer ROWAG AA is unsurpassed.

Write for full details and learn why ROWAG AA Lanolin is the preferred Lanolin of many of America's leading cosmetic manufacturers.

ROBINSON WAGNER CO., INC.

LANOLIN • LANOLIN ALCOHOLS • ALCOLAN • CETAL • BEESWAX

110 EAST 42nd STREET • NEW YORK 17, N. Y.

Cable Address: "ROWAG" • *Plant:* MAMARONECK, N. Y.

of this block the arterial blood pressure falls due to vasodilation and there occur mydriasis, inhibition of gastrointestinal movements and function of other autonomically innervated structures. In some cases mild toxic effects have been noted particularly following intravenous injection. The average intravenous dose of a ten per cent solution (100 mg. per cc.) is 1 to 5 cc. The larger dose provides a more prolonged effect. For intramuscular administration the dose should not exceed 20 mg. per Kg. of body weight. This method produces effects lasting for 6 to 8 hours. Since acetylcholine and epinephrine act on the autonomically innervated structures at a point peripheral to the ganglia they counteract the effects of the tetraethylammonium ion on these structures and consequently can be used as antidotes if necessary.

Clinical study has been conducted with this drug on diseases in which a high degree of sympathetic nervous system tone may exist. Among such conditions are included the following: essential hypertension, functional and organic vascular diseases such as Raynaud's, acrocyanosis, livedo reticularis, thrombo-angiitis obliterans (Buerger's), peripheral arteriosclerosis, causalgia, thrombophlebitis, and reflex sympathetic dystrophy. Tetraethylammonium chloride is supplied in a 10 per cent aqueous solution, pH 6.48, with Phemerol 1:10,000 as a self-sterilizing agent under the name Etamon by Parke, Davis and Co.

Dibenamine

Another adrenergic blocking agent recently reported is dibenzyl-β-chloroethylamine which is structurally related to the nitrogen mustards. It is effective when administered orally, subcutaneously, intramuscularly or intravenously. Large intravenous doses can be tolerated without local tissue damage and central excitation when the drug is slowly administered along with a sedative. It is thought that this compound may prove a useful tool for the study of the function of the sympatho-adrenal system and as a therapeutic agent in blocking the effects of this system. It may prove useful in a number of clinical states such as in peripheral vascular diseases where there is a component of functional spasm. In such cases it might be used to block the effects of sympathetic vasoconstrictor impulses. Interruption of sympathetic nerve impulses also causes favorable response in Raynaud's disease, causalgic states, early Buerger's disease and the vascular spasm which accompanies embolism and thrombophlebitis. Specific studies on cases of Raynaud's disease have shown a definite and prolonged salutary effect.

Hypertension caused by hyperfunction of the sympatho-adrenal system might possibly be helped by such an agent. Variable but encouraging results have been attained with it in the treatment of human essential hypertension. An initial transient orthostatic hypotension and a more prolonged lowering of the blood pressure have been noted. The prolonged action gives it an advantage over paravertebral local anesthetic clock and ganglionic block with tetraethylammonium compounds. Sympathectomy is less advantageous due to the fact that this agent acts on all vascular beds, is not sensitized to epinephrine or sympathin and maintains intact any vasodilator fibers which may be present. In surgical resection its controlled reversibility is a distinct advantage.

Clinical trial on humans revealed that the safest method which showed more consistent results was the intravenous route. Orally the compound was poorly tolerated and results were unpredictable. The dose found to be effective was 4 to 6 mg. per Kg. of body weight given intravenously. The activity reached a peak within 24 hours. In some cases the response to standard sympathetic stimuli is affected for several days after the first injection. This drug is supplied as Dibenamine for clinical trial by Givaudan-Delawanna, Inc.

Nitrogen Mustards

Another war-encouraged research project has given evidence of helping mankind. The nitrogen mustards, methyl-*bis* (β-chloroethyl) amine hydrochloride and *tris* (β-chloroethyl)amine hydrochloride, have been found to possess therapeutic value in the treatment of Hodgkin's disease, lymphosarcoma, leukemias and other neoplastic conditions. They are not considered cures for the diseases studied but improvement has been noted following their careful administration. Optimal dosage schedules have not been established. Caution must be employed in using them since the margin of safety is very narrow.

Certain side effects such as pain on injection, thrombophlebitis of the injected veins, nausea, vomiting, malaise, anorexia and headache, may be encountered but can sometimes be avoided by careful technic. Leukopenia, granulocytopenia, thrombocytopenia and anemia may occur later in treatment unless dosage is carefully controlled.

Pentaquine

Pentaquine is the generic name given by the Council on Pharmacy and Chemistry of the A. M. A. to the chemical compound 6-methoxy-8-(5-isopropylamino-amylamino)-quinoline which has been found useful in curing malaria due to *P. vivax*. When used in conjunction with quinine this compound has been found to be a superior curative agent. It is administered in a daily dose of 60 mg. of the base or 80 mg. of the phosphate (not to be exceeded) with 2 Gm. of quinine. The total dose should be administered in divided doses every 4 hours for 14 days. Concurrent administration of quinine increases plasma concentration of the pentaquine. Toxic effects noted include anorexia occasionally, abdominal pain and a slight methemoglobinemia. This drug is not released for general use.

Metachloridine

Field trials in British Guiana have shown that Metachloridine or 2-metanilamido-5-chloropyrimidine

(*Continued on page 561*)

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Production Forum

By FRANCIS CHILSON
Industrial Consultant

Cost Reduction Through Experience

Being penny wise and pound foolish is no more evident anywhere than in the sad experience of companies who have handled modernization and new construction projects with their own staffs. Many companies are under the illusion that by so doing they save a lot of money in outside engineering fees. But actually they have lost millions of dollars all through the trade.

Such firms would not think of handling major law suits with their own staff lawyers, nor would they handle major advertising programs with their own staff advertising man. But they fail to appreciate the enormous importance of uncontrolled, unbiased engineering thinking on new projects. A lost law suit, or an advertising campaign that fails creates losses that stand out immediately. But an engineering failure which may involve much greater losses is not immediately felt because its effects are buried in the overhead.

No inference is to be drawn from this that the writer regards "inside" engineers or staff engineers and production men as being incompetent. They are not. As a matter of fact, the best engineers—as such—the writer has met have been inside engineers. Inside engineers simply lack broad experience, and in any organization they rarely have more than one opportunity to modernize an old plant or build a new one.

But the limitation of engineering departments, and hence the reason for serious mistakes, consists in the fact that every engineering department is, after all, a *department*, subject to company supervision, control, politics, and policies. This attitude is proper when engineering is conceived of merely as a routine maintenance function. But it may be disastrous when important new projects are handled by the engineering department. New projects are not routine.

In most organizations the engineering department is subordinate to the production department—and properly so. This, however, places many limitations on the director of the engineering department. He may be forced to adopt a course of action with which he himself is not in entire agreement, simply because he has a job to protect and he dares not antagonize his superiors. The inside engineer may advance his views; he may even protest an approach to the problem which seems to him to be fundamentally wrong. But when he realizes that management is determined to follow that course of action, right or wrong, he, as a good organization man, will fall into line and proceed to carry out a project with which he is not wholeheartedly in agreement. Rare indeed is the man who will risk his job on his judgment. Once management has made a final decision, everyone must accept it or get out. But wrong "final" decisions can and have been changed by outside men whose experience and knowledge of the industry enable them to demonstrate in what particulars such decisions are wrong.

Another condition which limits the effectiveness of inside engineers on new projects is politics. There is no good saying you haven't politics in your organization, because you have. When two men work together you have organization, and when three work together, you have politics. We are all human beings, and politics, good or bad, are part of our mode of living and working together. Hence, unwise compromises are often made to appease the known wishes of the big shots or else to avoid antagonizing other powerful influences in the organization who might be in a position to retaliate later.

Another condition which is not always—in fact, is seldom—considered is the limitation of experience of the inside engineering department. As was indicated above, modernization and new construction projects are not encountered often in the history of the average organization. Hence, the limited experience of any

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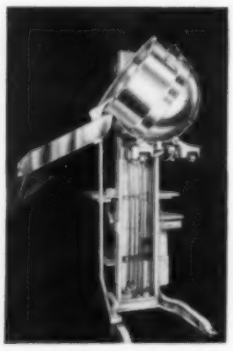

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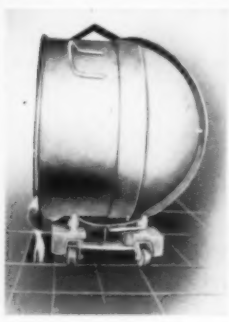

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engineering department will make it impossible to visualize effects that may prove enormously costly if not anticipated. Millions of dollars have been wasted in useless brick and mortar simply because the engineering department lacked the very broad experience that new projects require, or because organizational or political expediency dictated particular courses of action.

In the past, mistakes, often serious mistakes, were concealed because the new project was demonstrably better than the old and, in any event, the management had no criterion against which to measure what they did spend for new facilities against what they might have spent under other circumstances and under widely experienced guidance.

With costs of every conceivable kind going up all along the line, the drug and cosmetic industry is at long last becoming acutely cost conscious. Minimizing permanent overhead now is vitally important, and serious mistakes made in the development of new projects, which fix overhead and permanent operating cost at an unnecessarily high level, may some day ruin the business of the erring firms. Major mistakes in establishing new projects have often ruined companies in other industries where the margins are smaller than they are in ours. Since our margins are shriveling very rapidly, all costs and new investments—which have to be amortized—must be scrutinized with minute care, not only as to immediate results but also as to future effects.

Many managements fail to realize than an "investment" in a new project may actually prove to be an expense. If a serious mistake is made in a modernization or new construction project and thousands of dollars are invested more than need be, the effect is not immediately apparent because accepted accounting procedures would show that the sum had been capitalized and not "spent." If such mistakes were immediately apparent and had to be written off during the year in which incurred, there would be hell to pay. As it is, useless expenditures are considered investments and their amortization puts a floor under overhead which can never be lowered. That's the serious thing about such misadventures. Capitalized investments are merely deferred expenses. Capital items have to be maintained and amortized, *i.e*, written off to expense, annually over many—uncertain—future years.

Not long ago a prominent manufacturer of cosmetics decided to build a new plant. Because he had a good engineering department and had himself years ago studied architecture, he decided to handle the project through his own organization, with the aid of a general contractor. An attractive plant site was purchased—and the fact that it was attractive was apparently the only element investigated—and construction operations began. When the nice looking crust of earth was removed, it was found necessary to do some piling. Before the foundation could be poured, however, the piling had cost the tidy sum of one quarter of a million dollars.

That sum might just as well have been poured down the sewer. The nice new building which has since been erected on those piles can never in the future be expanded without further piling. Add to this the fact that the building is of the wrong type and is not properly placed on the plot and you have additional inherent present and future complications that will be reflected in the overhead. But in the meantime, everybody's happy because the building they've got now is better than the old one, besides being a lot better looking. Ignorance is bliss.

I can hear engineers snort "the damm fools should have made test borings all over the site before they started to build!" That's true. There are a lot of things they *should* have done. But the fact is, they *didn't*. When Mr. Big personally buys a plant site with no counsel other than what he gets from a real estate agent and when, further, he decides definitely to build on the site he has purchased, it is often unwise to question his judgment in the matter by implying that he may have made a serious mistake and suggesting that his purchase be carefully examined before it is developed further.

If you think the president of this organization exhibited a lack of foresight, what would you say to another case in the trade where the president of the outfit bought a plant site simply because he liked the looks of it from the road? He didn't even walk across it. Although the plant which eventually was erected on this site needed a lot of cold well water, it was only by the grace of God that the cold well water happened to be present when the wells were dug. Nobody had accumulated any data before the first well was dug to show whether there might be any water there or not. You would assume that common sense would dictate that since so much water was needed, the water table in the area would be the first thing to be investigated before acquisition of the site. But common sense doesn't always prevail—indeed, it seldom does—especially when Mr. Big, who may be a genius at administration, finance and selling, decides to take a hand in selecting the site of the machine called a factory. With equal logic he might as well fight his own lawsuits or design his own machines.

Don't get me wrong. I'm not implying that the men at the top are *always* arbitrary or that they are not generally intelligent. The trouble is that they are not always easily accessible, especially to the chief engineer who, in order to reach the general manager or president, may first have to clear his views with his immediate superior, the plant manager, and then after that, with several other vice-presidents, perhaps. If he does get a chance to expound his views directly to Mr. Big, it must be remembered that Mr. Big, if he's a good executive, will consider and evaluate the ideas advanced by his engineer in the light of that individual's previous training, experience and judg-

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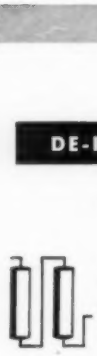

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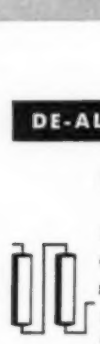

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ment. Likewise, he must also measure such suggestions against the broad economic aspects of the industry, with which an inside man of necessarily limited experience is not likely to be familiar.

The same attitude of mind often prevails with respect to the development of new automatic machinery. I've known of cases where ideas for new automatic machines, which would have saved a lot of money, were held in abeyance for five years before top management could be pursuaded to spend many thousands of dollars on the recommendation of their own engineers. But they'll do it readily when the opinions of their own engineers are confirmed by competent outside counsel. The fees paid the outsider have a stimulating effect in getting prompt action from management.

The same thing is true with reference to plant site selection. Not long ago, the writer was asked to examine a couple of plant sites that the president of one of the prominent companies in the trade had selected. One of them, indeed, he was particularly keen on. When the writer rejected both, for many unassailable reasons, Mr. Big was very much crestfallen, but when, three months later another site was discovered which was ideal in every respect and which cost actually $5,000.00 per acre less than the sites originally selected, his chagrin changed to a grin.

Let me give you some other examples. Not long ago, one of the smaller pharmaceutical outfits decided to build a new plant. The president of the outfit is notoriously "careful" with his money, as they say in New England. Outside engineering fees looked like a lot of money to him, so he decided to handle the project with his own staff. The result: because of one thing after the other that had not been "foreseen," the project cost almost twice as much as had been anticipated and it forced this company pretty deeply into the hands of the banks.

Not long ago, I went over a plant with its president for the purpose of considering a large addition which already had been authorized by the board of directors. The president of the firm told me that the plant site had originally cost $30,000.00 an acre. He had been induced to buy it because the prominence of the site and the attractiveness of the building would have immense advertising value! Then he added, noting the expression on my face, "I suppose you think I should have had my head examined?" I told him politely I thought so, and then some.

What happened in this instance was that the plant was located in a residential neighborhood which at the time the plant was built was zoned for light industry. In the intervening years, land values had increased enormously and more residential building had taken place. Regardless of ordinances, people always associate "light" industry with small factories. Even if your plant is actually performing operations that are well within the light industry class, you'll have a row on your hands the moment you try to expand the size of the plant. That's what happened in this instance. Word of the intended expansion program leaked out and a delegation of adjacent property owners immediately organized a committee for the purpose of preventing the expansion by obtaining an injunction. Not only was the expansion of this plant impractical because of legal complications, but it was not located on a railroad siding, consequently trucking and other costs were enormous. In any event, one group of the company's products were of such nature that their manufacture actually could be classified as heavy industry. These products previously had been purchased as finished products from outside sources and had increased in volume enormously so that there was no possibility ever of making these products on that site. To have expanded that plant would be merely adding one bad investment to another. Consequently, my recommendation to the board was that the expansion plan be abandoned and that new construction be undertaken in the future at the appropriate time. And on a suburban site.

Another pharmaceutical manufacturer decided to expand his plant. In spite of the fact that the business involves handling a heavy tonnage of materials, the old plant is located about a mile from the railroad siding. Following the advice of his bookkeepers, the president of the company decided that he couldn't afford to scrap the old plant—which is what he should have done—so a wing costing away over a million dollars was added to the old inadequate, improperly located plant. It was decided to use the old plant as a warehouse and the new one to house the processing equipment. At this point, a curious sort of reasoning becomes apparent. The old buildings which were built to carry only 150 lbs. per square foot maximum are to be used as a warehouse; the new building, which was built to carry 250 lbs. per square foot, is to be used for machinery, which, with the exception of a tankage operation, is so light that it doesn't require a very heavy floor loading. In other words, the lightly constructed floors are destined to carry the heavy weight, while the heavily constructed floors are to carry the light machinery. The pay-off came when the new wing was finished and it was discovered that so much more money had been spent on construction than had been anticipated that there was none left in the till to move the machinery which still continues to operate in the old buildings. In view of the difference in floor capacities, it would seem a good thing to leave it there. In any event, the new wing should never have been built because it has created a situation in which any future reorientation of that plant is unthinkable because of the great investment now entailed.

Engineering departments very often are over-ruled by production departments. Engineers not being responsible for production are forced to defer to the demands of the production department with respect to required space. Consequently, in any modernization or new construction program, the production department usually states how much space it must have in order to meet the required expansion demand. The

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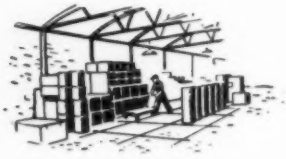
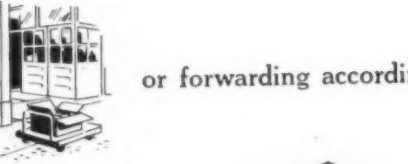
Bulk Shipment of pills, capsules, creams or powders comes to Our Receiving Department.  Careful testing in our Laboratory Control sends the assignment to be unit-packaged in Individual, Air-Conditioned Rooms. From there it goes to the General Assembly Room for insertion of literature and completion of packages and cartons. Then to our Shipping Room for return to you, or forwarding according to your instructions. A Superb Package created, designed and completed through the highly efficient and specialized facilities of this  Modern Packaging Institution.

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engineering department may argue but in the end it invariably loses out. The effect of this is illustrated in a recent experience where a liquid manufacturing department demanded 50 per cent more space than it then had. Considering the crowded condition of the existing department and the future plans of the company, this seemed a reasonable request, not only to the production people but also in this instance to the engineering department, and the request was accepted by the management. However, one important point had been overlooked until it was pointed out by the writer, and this was that existing usage of floor space is highly inflated because the old building was built to carry only 150 lbs. per square foot, whereas the new building, designed under the writer's supervision, was to be a one-story building with an unlimited floor load. Consequently, the large 3,000 gallon tanks which formerly had to be scattered all over the floor area, each of them requiring almost a full bay, could, in the new plant be pushed close together or even stacked one above the other. A 3,000 gallon horizontal tank occupies about 70 square feet of space. When filled, it weighs approximately 40,000 lbs., hence in the average 15′ bay (225 square feet) you can't safely support two of them on a 150 lb. floor. In this case, it was found that because of the floor loading one-story construction makes possible, the new liquid department, instead of needing more space, actually would require less than it now has. But it took an outsider to point this out, because no one in the organization had had any experience operating a single story plant.

It strikes me that large holding companies which own and operate several different plants in various parts of the country are perhaps more susceptible to the false economy of centralized engineering than other firms which only operate one plant.

On the face of it, the idea sounds logical. Several plants require a lot of engineering; therefore, if centralized in one place, the engineering service can be had at reduced cost. Actually, the opposite is true.

Such an engineering department, like all other departments, is subject to all the rules and regulations of the parent company. It is even worse off in many respects than single company engineering departments because it must deal with subsidiary companies, each of which is generally operated as an independent unit, and may have its own president and possibly its own engineers. Consequently, the centralized engineering department has to buck a combination of politics, personalities and geography that is almost insuperable. It's bad enough to be required to give battle in your own plant, but when you've got to battle with people of all degrees of experience, with all manner of conflicting ideas, and scattered all over the country, operating and engineering problems cannot properly be solved. Hence, the head of the centralized engineering department usually will follow the line of least resistance and coast along, keeping in the good graces of the multitude of executives with which all holding companies are infested. In industry as in politics, a man's first concern is to hold his job.

To a lesser extent, the same thing is true in large companies, especially chemical companies which have several plants. In such cases, however, the several plants as a rule were established from time to time, and in consequence the men operating them are likely to have grown up in the main plant, and therefore are better able to operate effectively. But even in such cases, centralized engineering likewise is limited by politics, geography and routine organization procedures.

Some years ago, I was offered a five year retainer by duPont, on condition that I devote my entire time to their plants. I was to be permitted to retain my consulting status and a separate office. Their purpose was to offset the subjective "departmental" thinking of their own engineers. But I refused this attractive offer because, for all practical purposes it would have made me an employee, subject to company discipline and politics like all other employees. It would have entailed for me a loss of contact and experience with other firms and other problems. I knew my effectiveness would be lost the moment I got myself in a position where I could not go to Mr. Big in cases of disagreement on fundamentals and argue it out with him without worrying about the loss of my retainer or the effect of my views on Mr. Big's future attitude toward me.

Generally speaking, however, Mr. Big can be persuaded to change his opinions and even his decisions, when he is confronted with *facts and figures, based on experience*, and not merely guesses and opinions. The bigger he is, mentally, the more readily will he change his decisions.

To offset mounting costs of every character has become the paramount job of every engineering department and every engineer and production man. To know the present sources of high cost and how to correct them for the present is a simple problem. To know how *properly* to reduce such costs to the *absolute minimum* for the *future* as well as the present is a much more difficult problem. That takes very broad experience. But the slogan for all operating men must from now on be: *Increase the spread! Improve the quality!* In this way only can the marketing department properly be serviced in the tough competitive times ahead.

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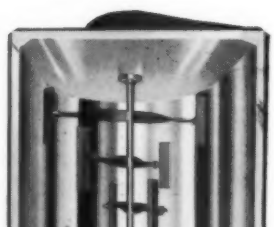

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Type CJ Stainless Steel Jacketed Tank is a new, proven development for rapid cooking and mixing of liquid products. Tanks are equipped with vibrationless Rotary Seal Agitators. Working Capacities from 60 to 1,000 gallons.

A complete line of Single Shell, Stainless Steel San-I-Tanks is available in every size and capacity. Shown at right are Stock Pots, a popular item of this line. They can be equipped with stainless steel nipples, covers and casters. Capacities from 5 to 50 gallons.

STAINLESS STEEL SAN-I-TANKS

SERVING THESE INDUSTRIES: BEVERAGE • MILK • FOOD • DRUGS • CHEMICALS • COSMETICS

METAL GLASS PRODUCTS COMPANY

GENERAL OFFICES BELDING 2, MICHIGAN

fractional separation of liquids of high boiling point which undergo chemical change at temperatures required for conventional distillation. Re-examination of many animal and vegetable fats and oils, fatty acids and waxes, should result in new and valuable by-products.

High vacuum fractionation of materials of high molecular weight, such as plasticizers, essential oils, drugs, and fine chemicals, should lead to products of higher purity and potency.

Essentially the complicated apparatus operates by simultaneous condensation and re-evaporation in a high vacuum column. The vapor condenses on a rapidly rotating condenser, the droplets condense being hurled off the condenser and partially re-evaporated on the heated column. The liquid film flows down the evaporator wall and the vapor stream moves up the annular space, being continually enriched by the removal of higher boiling materials by the condenser and the addition of lower boiling point materials by the evaporator.

Small scale stills are now being made and sold royalty-free for research purposes.

The following information is supplied by manufacturers of the equipment described and claims made below by these manufacturers are passed along for what they are worth. Presentation of such notice in this department is not to be taken as endorsement of the claims or of the equipment.

Process Control Timer

C. J. Tagliabue Corporation, 614 Frelinghuysen Ave., Newark, N. J., has announced its latest time-schedule controller. It is claimed that this new timer is most practical, and can be synchronized with any system of air-operated semi-automatic temperature and pressure control now in use to make the process fully automatic.

Such an installation will enable manufacturers, engaged in processes involving the control of temperature and pressure according to pre-set time schedules, to obtain fully automatic time schedule control at relatively low cost and without disposing of presently installed equipment.

The Tag Time-Schedule Controller, as the instrument is called finds many uses in industries such as chemical and plastics. Additional information can be had on request to the Tagliabue Company; ask for bulletin No. 1283.

New Platform Truck

Providing a solution to the problem of handling skids of different heights, the Yale & Towne Manufacturing Company has designed a new model of its platform worksaver. The battery powered hand truck has a full 13 inch lift in contrast with the 2 or 3 inch lift generally found in platform models. Skids ranging from 6 to 18 inches in height can now be handled by the one truck.

The modification was designed to solve the problem of the manufacturer who receives from and ships to numerous customers, each may have a different type skid, skid-rack or skid-bin. It is also a valuable tool in those plants which have skids of different leg-lengths in internal departments.

The truck has a capacity of 6000 pounds and combines the regular worksaver of short turning radius, light weight, small size, and ease of maneuverability.

Gravity Filler

The MRM 5-G gravity filling machine is designed to fill materials and containers which cannot be handled by either vacuum or pressure. This machine handles all types of containers having a $\frac{3}{8}$" mouth opening and offers a full adjustability from small size containers to one gallon.

For full particulars, write to MRM Company, Inc., 193 Berry St., Brooklyn, N. Y.

Construction Costs

In the April 1946 issue of Factory Management and Maintenance, W. G. Sanders, Research Engineer of the H. K. Ferguson Company in Cleveland gives some figures on construction costs by types of building. According to Sanders, a two-story building will cost 5 per cent more than a one-story building. A three-story building will cost 10 per cent more; a four-story building will cost 15 per cent more, and a five-story building will cost 20 per cent more. This, of course, substantiates what I've always said about the increase on costs per square foot as the building height increases. Apparently Sanders' figures deal with construction cost only and do not take into account net usable space, which in a one story building would be at least 13 per cent more in a one story building than in a five.

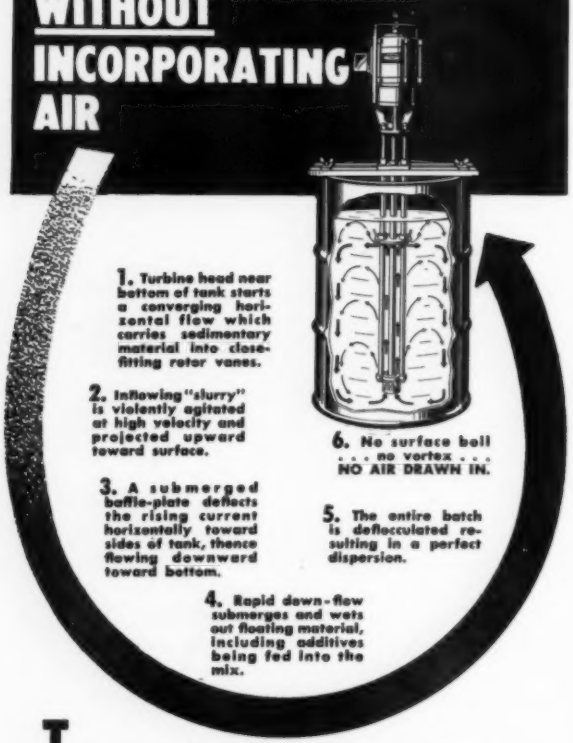
Air Recovery Handbook

W. B. Conner Engineering Corporation, air conditioning accessory manufacturers have published an engineering and application book on its type "H" Dorex air recovery equipment which is used in the conversion of stale, vitiated, or contaminated air to its original freshness, either in order to conserve it for re-use or to correct exhaust and intake odor nuisances.

Dorex type "H" equipment consists essentially of hollow-walled cylindrical canisters containing specially processed activated carbon, using the same principle as the gas mask, adsorption of gases and vapors, air recovery has a host of industrial and commercial applications where a positive means of odor removal is required. However, by far the broadest and most general use is in cooling and heating installations where conservation of conditioned air either minimizes the size of heating and cooling plants or expands their capacities by reducing the volume of unconditioned out-door ventilation air that otherwise is needed.

Copies of this new data book may be obtained by request for bulletin 105-A to W. B. Connor Engineering Corporation, 114 E. 32nd St., New York 16.

EPPENBACH HOMO-MIXER MAKES DISPERSIONS WITHOUT INCORPORATING AIR


1. Turbine head near bottom of tank starts a converging horizontal flow which carries sedimentary material into close-fitting rotor vanes.
2. Inflowing "slurry" is violently agitated at high velocity and projected upward toward surface.
3. A submerged baffle-plate deflects the rising current horizontally toward sides of tank, thence flowing downward toward bottom.
4. Rapid down-flow submerges and wets out floating material, including additives being fed into the mix.
5. The entire batch is deflocculated resulting in a perfect dispersion.
6. No surface boil . . . no vortex . . . NO AIR DRAWN IN.

The Eppenbach HOMO-MIXER is built on an entirely new principle. Whereas ordinary mixers create a vortex in the material that pulls in air, the HOMO-MIXER draws only from the bottom of the tank. Entrapped air tends to cause separation and splitting, and frequently oxidizes the product.

Furthermore, the HOMO-MIXER does not require a high head of liquid to give efficient mixing action. It is possible to process material in a tank at a depth just great enough to cover the mixing head. Fits tanks of all types and shapes . . . no clamps required . . . no special angle of installation.

Write for complete details of this mixer—"the only one of its kind." Ask for Catalog No. 402.

Eppenbach HOMO-MIXERS are available in a complete range of sizes for laboratories and production plants. Capacities range from 2 to 2,000 gallon batches from ¼ to 25 H. P.

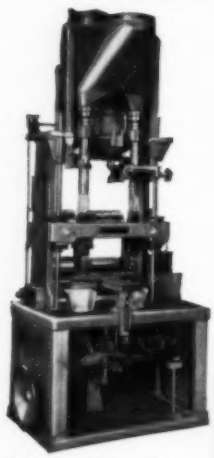
EPPENBACH, INC.
45-10 Vernon Blvd., Long Island City 1, N. Y.

EPPENBACH INC.
Processing Equipment for Over 30 Years

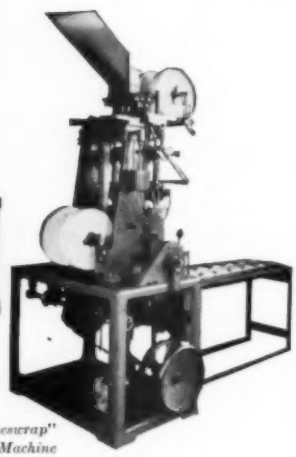
STOKESWRAP

PACKAGING MACHINES

for powders • granules • salted nuts • small candies crackers • individual pieces and frozen foods



Model BS "Stokeswrap" Packaging Machine



Model AS "Stokeswrap" Packaging Machine

The "Stokeswrap" Packaging Machine feeds the film (printed or unprinted) from the roll, automatically forms the package, fills with the desired amount of the product, and heat seals. Production—50 to 100 per minute. Various types of feeding devices are used to suit the product to be packaged.

We will gladly send complete details. Also, we will furnish sample "Stokeswrap" packages if you will send us a small quantity of your product.

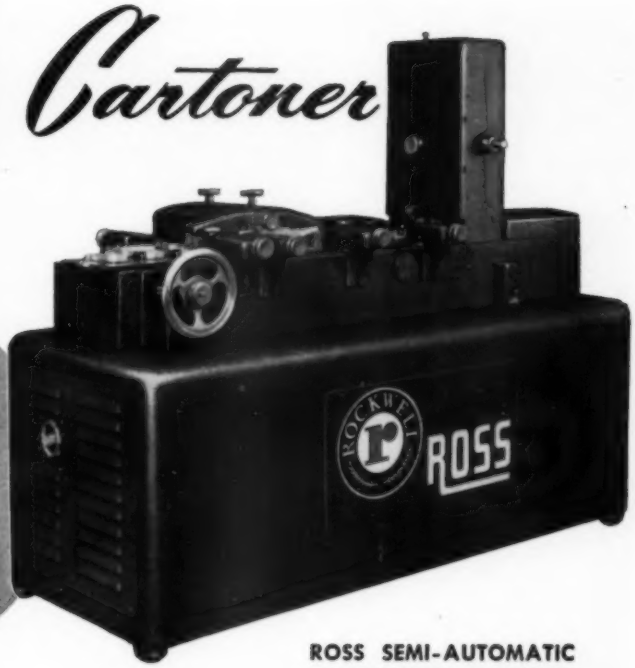
We also make a complete line of
FILLING—PACKAGING—WRAPPING MACHINES

Visit our Booth 201-202
Packaging Exposition, Cleveland Auditorium, April 26 to 30

STOKES & SMITH Co
PACKAGING MACHINERY — PAPER BOX MACHINERY
4912 SUMMERDALE AVE., PHILADELPHIA 24, U.S.A.

This ROSS Cartoner

SETS UP AND TUCK SEALS ONE END OF A CARTON



ROSS SEMI-AUTOMATIC CARTONING MACHINE

Will set up and tuck seal a wide range of various size cartons ready for hand loading or hand filling. Operating range is in excess of 120 cartons per minute. Fully automatic Ross machines that first load and then seal both ends of the carton are also available.

PAYS FOR ITSELF

out of savings

By keeping everlastingly busy . . . by cutting expensive downtime during carton size changeovers . . by saving manpower through eliminating manual setting up of cartons, ROSS CARTONING MACHINES PAY FOR THEMSELVES!

Seldom will you find any kind of a machine that gives a greater return on your investment. And you can't buy a better built machine. Parts are standardized; made to close tolerances. Vital moving units are self oiled. Master Speedranger control provides maximum flexibility. Mail the coupon today for complete information.

YOU DIAL IT LIKE A RADIO!

A change from one size carton to another can be made in a few minutes time *without* substituting interchangeable parts. It's done by simply resetting the position of dial controlled compounds that are permanently mounted on the machine bed.

SEND FOR FREE LITERATURE

A. H. ROSS COMPANY, Inc.

PACKAGING MACHINERY

Subsidiary of Rockwell Manufacturing Company

Box 998, Dayton 1, Ohio

SEE US IN BOOTH NO. 608 AT THE 17th A. M. A. PACKAGING EXPOSITION

A-248

A. H. ROSS COMPANY, INC.
Box 998, Dayton 1, Ohio

Gentlemen:

Please send me, without obligation, your complete engineering and performance data on Ross ☐ semi-automatic or Ross ☐ automatic machines.

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CITY_____ ZONE_____ STATE_____

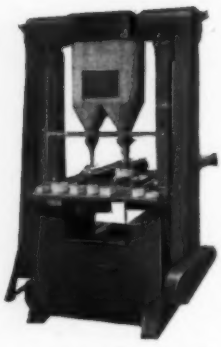
YOUR NAME_____ TITLE_____

US

Manufactures Machines For

NET WEIGHING
GROSS WEIGHING
PACKING
PACKAGE FORMING & FILLING
CARTONING
CARTON SEALING
CARTON LINING
CARTON WRAPPING
PAPER BOX FORMING
PAPER BOX COLLAPSING

. . . they chose US



Model MH "BOND" Semi-Automatic VOLUME FILLER, WEIGHER OR PACKER

The fillers of the bottles illustrated chose the MH Bond Semi-Automatic Twin Station Filling Machine because they use a great number of container sizes in packaging a wide range of materials. The MH Bond can be easily and rapidly converted to suit each of these numerous products and containers. It is the ideal machine to volume fill, gross-weigh or pack such products as ground spices, powdered drugs, talcum, flour, soap powder, cocoa, etc. And, the MH can pack each in the most desirable containers—whether they are boxes, cans, bags, jars, envelopes or cartons.

The model MH is a speedy and precise twin station machine requiring but one operator. It can fill up to 40 containers per minute, with negligible variations in the packed weight.

The MH Bond is but one of several filling machines manufactured by **US**. Other models include semi-automatic and automatic, one, two, and four station machines—among them is the most profitable solution to your packaging problem—write **US** today.

US Automatic Box Machinery Co. Inc.

Owning and Operating

NATIONAL PACKAGING MACHINERY CO. • CARTONING MACHINERY CORP.

18 ARBORETUM ROAD, ROSLINDALE, BOSTON 31, MASS.

Branch Offices: NEW YORK CLEVELAND CHICAGO
LOS ANGELES (KRUGH EQUIPMENT & SUPPLY CO.)

Cut your water costs from this $6.00 Per Thousand Gallons by STEAM DISTILLATION to this* 45¢ Per Thousand Gallons by DE-IONIZATION

THE DORR COMPANY, ENGINEERS
Ion-Exchange Division
570 Lexington Ave., New York 22, N. Y.

Send me your new Bulletin #4081 giving information on all types of DORRCO D-I SYSTEMS.

NAME_____
COMPANY_____
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* Actual figures from a typical user

with the Dorrco D-I System

Reports from users throughout the chemical industries show that the Dorrco D-I System slashes water production costs to a fraction of former levels wherever used.

Produces Water of Distilled Quality

Using high-speed, high-capacity ion-exchange resins, the Dorrco D-I System produces the equivalent of distilled water . . . in most cases comparable to standard U.S.P. distilled quality.

100 to 1000 Gallons Per Hour

The self-contained Dorrco D-I "E Unit" illustrated, is available in 5 sizes with capacities ranging from 100 to 1000 gallons per hour. Other Dorrco D-I Systems . . . ranging from a few gallons to several million gallons capacity per day . . . can be designed to fit individual requirements.

Simple to Operate

Compact and easy to start up, the "E Unit" requires no operator except during regeneration periods. Conductivity controls indicate quality of treated water . . . positively prevent raw water from contaminating treated water storage.

Prompt Shipment

Component parts of D-I "E Units" are carried in stock—need only to be assembled to fit your individual requirements prior to shipment.

For Further Information

Write *now* for your copy of Bulletin #4081 . . . just off the press . . . packed with 24 pages of data on all types of D-I Systems.

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THE DORR COMPANY, ENGINEERS
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ASSOCIATES AND REPRESENTATIVES
Dorr Technical Services and Equipment Are Also Available Through Associated Companies and Representatives in the Principal Cities of the World. Names and Addresses on Request.

DORR

RESEARCH ENGINEERING EQUIPMENT

THE "Sealed-Disc" Filter In Action

for the dependable, uniform clarity and brilliance of *All Liquids*

THIS COMPACT PORTABLE POSITIVE FILTER

A real space and time saver

"*Sealed-Disc*" Filters have proved their ability on extracts, drugs, chemicals, perfumes, cosmetic preparations, animal and vegetable oils and other similar liquids that require a fine degree of clarity without altering taste or color. Compactness and portability assures ease and speed in handling, air-tight construction prevents leakage and even evaporation. Available in Stainless Steel, Monel Metal, Nickel Plated Brass and Bronze, etc. with or without pumps in sizes from 1 g.p.m. to thousands of g.p.h. Write for our bulletin No. 745.

The Alsop Engineering Corporation
304 Cass Street **Milldale, Conn.**

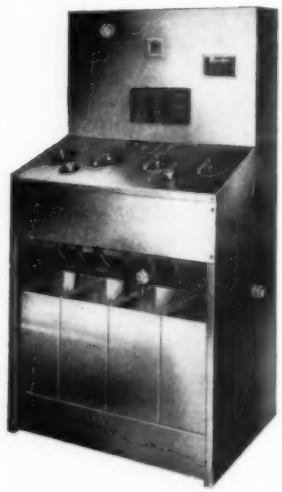
ALSOP ENGINEERING CORPORATION
Filters, Filter Discs, Pumps, Tanks, Mixers, Agitators

Ready for Action!

THE NEW

Barnstead UPFLO Demineralizers

The newest and easiest way to get de-ionized water



If you need highest test mineral-free water at lowest cost, these trouble-free units are the simplest and most convenient to operate. Regeneration time is cut nearly in half by eliminating backwashing and reducing valve operations. Barnstead UPFLO Models are so compact they take little floor space and are exceptionally easy to install. Just connect to water and waste lines. Unit comes completely set up with all interconnecting piping, valves, etc. Regenerating tanks are built in, and resins are in columns ready to operate.

- *Compact package unit, completely assembled.*
- *UPFLO principle gives higher purity.*
- *Costs only a few cents per 1,000 gals.*
- *No backwashing—cuts regenerating time in half.*
- *Contains built-in automatic control light.*

First in Pure Water since 1878

Barnstead
STILL & STERILIZER CO. Inc.
7 Lanesville Terrace
Forest Hills, Boston 31, Mass.

Air-Clean Up To 130 Containers Per Minute

Two complete revolutions of every container for each revolution of the machine provide double cleaning time at normal operating speeds . . . in half the usually needed working space.

Vertical upside-down position of the container at the point of cleaning not only produces the most thorough cleaning action but also insures the most economical use of compressed air. Foreign matter air-forced from containers is collected in easily removable bag.

The Sanitair will clean all size containers from AGST bottles to wide mouth containers . . . requiring only a ten-minute adjustment for change from one container size to another. Containers can be of glass, tin, china or other materials.

Fast cleaning action from comparatively slow moving mechanism insures remarkably smooth-running machinery with exceptionally long wearing life. Our "Sanitair Bulletin" describes all details; write for it today.

The SANITAIR
D-O-U-B-L-E A-C-T-I-O-N
AUTOMATIC AIR CLEANER

OTHER U. S. AIR CLEANERS. The E-Z two-tube Air Cleaner is a simple portable unit. It is automatic except for manual handling of containers. A complete air compressor unit that efficiently cleans up to 40 containers per minute. Write for the "E-Z Bulletin."

U. S. BOTTLERS
Machinery Co.
4013 NORTH ROCKWELL STREET
CHICAGO 18, ILLINOIS

MANUFACTURERS OF
PUMPS
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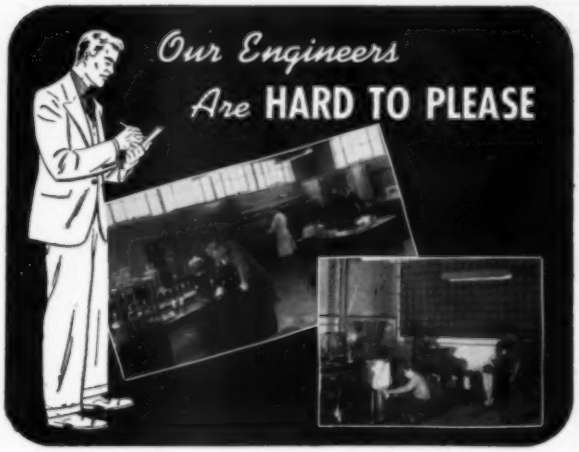
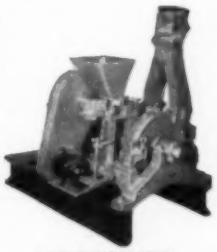


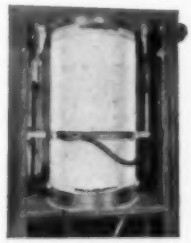
From start to finish . . . . from basic laboratory research to the smooth functioning of a machine fashioned specifically for your individual needs . . . . our technicians work tirelessly to lick your pulverizing and dust collection problems and to see that they stay licked.

They are steeped in a tradition nurtured by a quarter century of service which rejects the phrase "good enough." They are schooled in the philosophy of constructive dissatisfaction . . . . trained never to "let go" until they have given you a MIKRO-PULVERIZER, or a MIKRO-ATOMIZER, or a MIKRO-COLLECTOR insuring the last word in the quality of your product and the very last pound in your potential volume.



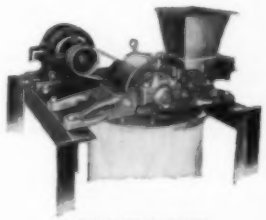
MIKRO-ATOMIZER
for ultra-fine grinds

Or, they will tell you frankly if their preliminary studies, checked against the data gleaned from 55,000 tests already made in our Laboratory, prove that our equipment is not adaptable to your use. They are never permitted to forget that our company built its worldwide reputation on the intensely practical consideration that its own profits will always ascend to the level of its ability to increase yours.



MIKRO-COLLECTOR
for optimum dust recovery

It costs you nothing to sample the thoroughness of these efforts in your behalf. Simply send today for your copy of our Confidential Test Grinding Data Sheet.



MIKRO-PULVERIZER
for granular or fine grinds

25 YEARS SERVING INDUSTRY

PULVERIZING MACHINERY COMPANY
22 CHATHAM ROAD • SUMMIT, N. J.

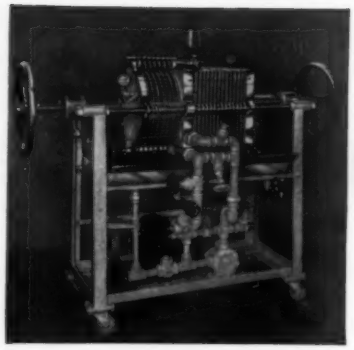
MIKRO-PULVERIZER (FINE) -ATOMIZER (ULTRA FINE)
Reg. U. S. Pat. Off.
Also Makers of the MIKRO-COLLECTOR

A NEW COLTON ROTARY TABLET PRESS
SERIES 200-25 ROTARY TABLET PRESS

The design of the Series 200-25 Tablet Machine is an outstanding engineering achievement, the culmination of years of experience in building tablet machines. This compact machine incorporates refinements that provide an entirely new standard of performance for this type of equipment.

ARTHUR COLTON COMPANY

2620 East Jefferson Established 1884 Detroit, 7, Mich.



3-WAY MULTIPLE FILTER

Here is a filter designed to reduce filtering costs! The 3-way unit pre-filters and polishes in one operation. Either section can be used independently and the pump can also be used as a separate transfer unit if desired. Single hand wheel for each section —simple trouble-free operation.

WRITE FOR CATALOG 15 TODAY

ERTEL FLUID HANDLING EQUIPMENT

ERTEL ENGINEERING CORPORATION

KINGSTON NEW YORK

New York City Sales Office: 40 West 48th Street, New York 19, N. Y.

ASBESTOS FILTER SHEETS • ASBESTOS SHEET FILTERS
BOTTLE FILLERS • PORTABLE MIXERS • PLASTIC PUMPS

CUT YOUR

LABELING COSTS

POTDEVIN

6"—8½"—12" and 18" wide

LABEL PASTERS

Write for FREE catalog LP-10

POTDEVIN MACHINE CO.
EST. 1893
1257 38TH ST. BROOKLYN 18, N. Y.

POTDEVIN

Here's what you'll like about the new

..."HAGERTY HANDY FILLER"

- Durable
- Moderately priced
- Eliminates spilling
- Simple to operate
- Convenient sizes
- Light construction

The most practical hand filler for creams, lotions and liquids.

Write for illustrated folder and prices

HAGERTY BROS. & CO.

10 Platt Street New York, N. Y.

Est. 1849

For Unvarying Color Match . . .

Unvarying color match is attained by skillful fraction-ounce weighing in compounding, often to 1/1000 oz. in fine color blends. When EXACT WEIGHT Scales are used results are uniform, exacting, unvarying. Added to this high quality EXACT WEIGHT Scales also give you speed for volume production. There are several models for compounding. We fit the particular model necessary for your work entirely to your specifications. Write for details today.

Model UAB 9051 Shadograph . . . a new EXACT WEIGHT Scale for Penicillin packaging. Dial reading made from mirror mounted above dial graduated 75 mg under and 25 mg overweight. Magnetic damper checks indicator to four beats for speed of operation. Current—110 volt, AC standard. Capacity—1200 MG . . . sensitivity 2 mg. (Under glass and protected from air currents 1 mg.)

INDUSTRIAL PRECISION

Exact Weight Scales

THE EXACT WEIGHT SCALE COMPANY

950 West Fifth Avenue, Columbus 12, Ohio

Dept. AK, 783 Yonge St., Toronto 5, Canada

"Roller-Type" JAR MILLS

FOR maximum convenience and low cost in grinding and pulverizing pigments, minerals, inks, colors, chemicals, etc., you can't beat "U.S." *roller-type* jar mills. They require no clamping into frames or housings. Just set the jar on the revolving rollers, and let it roll.

Only in "U.S." *roller-type* jar mills will you find these two important features:

1st The special design of the rubber-covered steel rollers, one convex and one concave,* automatically holds the jar centered on the rolls, prevents creepage.

2nd The "idler" rollers are adjustable laterally to permit handling various size bottles, mill jars or other round containers. Roller-type jar mills without this adjustable feature are available at slightly lower cost.

"U.S." *roller-type* jar mills are made in sizes to accommodate from one to sixteen mill jars of any capacity up to six gallons, and are available with or without cabinets, clocks, timers, etc.

Write today for Catalog 260 showing various styles and types of "U.S." roller-type jar mills.

U. S. STONEWARE

Since 1865 • Akron, Ohio

*Patent Pending

A Star Packaging Performer

on difficult powders

This efficient Auger Packer, with an exclusive easy-cleaning feature and simple finger-flick adjustments for rapid changeovers, will do more than its share in helping you meet consumer demands for greater production. Designed to conserve floor space and minimize operator fatigue, Model U-1 quickly pays for itself in packaging economy that helps ease the strain of higher labor and material prices. It's a *star* performer for accurate, tight packing with uniform density throughout the container.

SAVES SPACE—LABOR—TIME
AUTOMATIC—NO FOOT PEDALS—UNIFORM
ONE OPERATOR FILLS 20 TO 30 CONTAINERS PER MINUTE
HANDLES WIDE VARIETY OF POWDERS
RANGES FROM 1 OZ. TO 5 LBS.
GUARANTEED ACCURACY & SPEED
IMMEDIATE DELIVERY

These features, plus many more, are detailed in available circulars to describe the low-unit-cost benefits of the packaging star. Write today.

Here are a few of the powdered products handled by Model U-1 Auger Packer. Uniformly packs bags, jars, cans, cartons, bottles.

Whatever dry material you package, in bulk or small quantities, there's a Triangle machine designed for your needs. Write for literature on Weighers, Fillers, Carton Sealers.

TRIANGLE PACKAGE MACHINERY CO.
929 NO. SPAULDING AVENUE, CHICAGO 51

Sales Offices: New York, Pittsburgh, Jacksonville, Los Angeles, San Francisco, Memphis
Branch Factory: Los Angeles

Filpaco SIPHON FILLER

for Medium and Small Production-Filling

Ideal for: water, acids, alcohols, light oils, chemicals, medicinals, liquid soap.

- Fills all styles and sizes of containers ranging in size from 2 oz. to one gallon.
- Uniform filling of every container.
- No pumps required.
- Economical—Efficient—Durable.

Write today for our illustrated literature on the SIPHON FILLER.

Other "FILPACO" Products:

Filters, stainless steel storage and mixing tanks, fillers, pumps, conveyors, fittings, filter paper, filter cloth, asbestos pads and filter aids.

THE FILTER PAPER CO.
2428 South Michigan Avenue, Chicago 16, Ill.

COLLAPSIBLE TUBE

Filling—Measuring—Closing MACHINES

Full or Semi-Automatic Model 705

A Tube Filling, Measuring and Closing Machine to meet the ever-increasing demand for economy, speed and positive production. The vast background of experience and knowledge in this field has resulted in the construction and design of a machine of superior performance.

Built to meet today's needs—with an eye to the production of tomorrow—unrivalled for accuracy, speed and economy.

Also available—Tube Closing Machines
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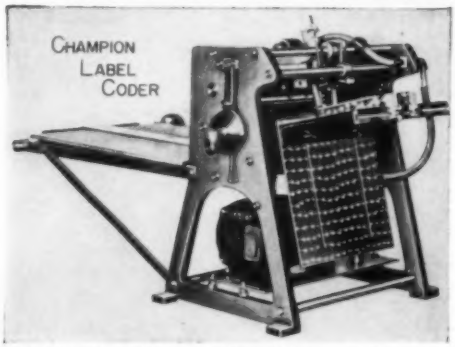

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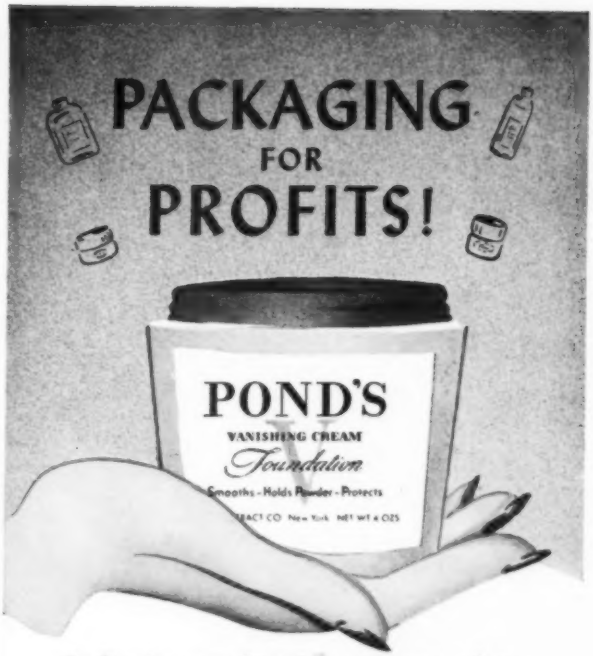

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YOUR TRADE-MARK RECORD

By JOHN H. GRAHAM
International Patent and Trade-Mark Consultant

The International Situation Today!

As the world slowly unwinds itself from the tangles of the last war, more and more questions are being asked as to what is going on abroad. With the final date of the so-called Boykin Bill gone by as of last February 29, there are no countries left where it is possible to pay fees, restore or otherwise act upon patent or trade-mark matters which have been unavoidably overlooked due to war conditions.

There are one or two exceptions to this statement and, of course, we still have Germany and Japan to consider in the future when the respective Allied Control Commissions permit the resumption of normal activity in the Patent Offices.

What it means today, however, is that in nearly every country and certainly in every important country of the world, from the point of view of patent and trade-marks the war is over. Thus from now on procedure for the filing of patent applications and of trade-marks will be as it was before 1939, and as the various Patent Offices catch up with their backlog of work, normal resumption of the issuing of patents and trade-marks will take place. At the present time in most of the important countries the backlog of work in both patents and trade-marks is terrific.

Then there is a shortage of paper in many of these countries so that even when acceptance is officially made, printing of the certificates is delayed. This, however, is only a temporary measure and just as a few months ago it was three years in England before we had action, for example, now it is nearer a year.

Patent and trade-mark activities in foreign countries would thus appear, on the surface, to have slackened considerably during the war and since the cessation of hostilities. But this is not actually the case for the reasons given above.

As soon as some evidences of normalcy are approached we shall see the issuing of foreign patents and of foreign trade-marks quite fast and, then it will be found that many people have taken advantage of the time between to consolidate their position abroad. Many of the European countries are at the present time frowned upon from the point of view of patents and trade-marks because of the Russian domination which appears to exist. Therefore, a question often comes up in conferences to determine where to file abroad as to whether it is worthwhile or not to file in places like Czechoslovakia, Bulgaria and so on.

Of course, the nature of one's business is a determining factor but one thing should always be borne in mind. That is, that today's domination may tomorrow be removed and then it may be too late, particularly in patent matters, to proceed. In the last few years we have learnt to depend quite a lot upon the special regulations permitting belated filings, even to the extent of permitting the filing of a patent application when, for instance, the U. S. patent has been issued. Normally, the issuance of a patent in any country of importance prohibits further filings in other countries if more than twelve months have expired from the date of filing in the first or principal country.

We are back to this rule and therefore, when considering the question of filing, first of all, in the satellite countries it should be borne in mind that a decision must be made before publication of a patent in any country if this one-year period has expired. Similar conditions existed after the first World War and many people who hesitated to file in countries which seemed unsound were later unable to do so when they suddenly found the country had regained its stability.

Turning now to the countries which form the Western Bloc in Europe, such as France, Belgium, Luxembourg, Holland, etc., quite a different situation appears. In these countries great strides have already been made to stabilize their industry. Most of them are only waiting for the final passage of ERP or the Marshall Plan in order to actively engage in international patent and trade-mark activities.

In France, for example, the manufacturers are eager for any development, particularly patentable, which will assist their national recovery. The question, of course, always comes up as to how the American firm who arranges a license agreement with a French manufacturer can get his money out of France. The answer to this is twofold. The first part is that the French government will sanction payment of dollars for such matters if it can be shown that the developments in France flowing from these patents, etc. will assist France in her gain for freedom of industry and economic stability. The other answer is that we can hardly expect conditions to remain in France in their present state for very long.

Thus in matters pertaining to the cosmetic, toilet goods and equivalent industries it is a good time now to consolidate the position in France because there will come a day when dollar payments will readily be made and, in the meantime, development and the prep-

aration of the market will be proceeding so that when that time comes there will be something more tangible for the French to offer to the Americans.

American "know-how" is being eagerly sought throughout Europe. This is so much the case that the typically American quotation "know-how" is being used by French industrialists to denote that which we have to offer to them for their development. There is, of course, another thought to be borne in mind and that is, particularly in the industries at which this magazine is aimed, there is always the possibility of France being able to offer some advantages to American firms, and we have full evidence in the perfume field

Regarding drugs this is, of course, another matter entirely and many of them are being sought for in France.

The situation in England is very similar although the existence of a labor government in that country causes many people to hesitate in their decisions regarding investing money in England in the form of patents and trade-marks. Again, however, from personal observation and discussions with representatives from that country I can say that there is great possibility of major changes of government within a relatively short while.

Switzerland is a country which is also eager for great developments. This country, however, is not suffering at all from the financial aspect but appears to have all the dollars and pounds that it needs to pay on a cash-on-the-line basis.

The same remarks apply to Belgium and to Holland, both of which countries seem to have quietly regained much of their losses due to war conditions and appear to be well on their way toward economic stability.

Countries such as Austria and Germany are also slowly regaining some degree of normalcy although, as it is known in Germany, there are too many conflicting factors of the Allied Control to contend with. However, as noted hereunder a form of Patent Office for patent and trade-mark matters will shortly be set up for the British and American zones and likely will be extended to the French zone, and obviously when the whole area is covered by a national patent office again, such registrations as are now made will be transferred to the main register and thus will again give the first comer quite some advantages.

Austria has recently reopened its Patent Office but most of the records are destroyed. However, anyone who had a patent or trade-mark before the war can refile same now, preserving the old date by producing the correct certificate and paying the necessary fees. New patent and trade-mark applications can also be filed in Austria and from all appearances, the country bids fair to regain a certain economic stability very shortly.

The news from Italy at the moment of writing is a little vague because of the coming election, and the outcome of that election will place this country either in the group belonging to the dominated countries or in the so-called independents equivalent to the Western Bloc. The news from Italy at the present time is quite good. Again, the country is equally searching for American "know-how" and is striving hard to get back on a solid foundation. The patent and trade-mark laws are being streamlined and the offices are functioning in fairly normal condition, except for a backlog of cases.

It is easy to segregate any other of the countries and place them either in the category of the Western Bloc or in the category of controlled areas under foreign domination, and it will be found that the remarks above given apply equally to such countries, depending on their allocation.

Looking over the whole picture of Europe, therefore, it would appear that now is a good time to evaluate the advantages of filing patents and trade-marks in those countries, thus establishing a beach head for your future sales. As the countries achieve greater stability, the people who have gotten there first will find themselves in a very enviable position.

On the other side of the ledger, of course, there is always the fear of another war and equally fears of breakdowns of certain governments, but review of the history of the years between the first World War and the beginning of the second World War shows that this instability of government was pretty constantly before us, and yet in those years many American firms were successful in their foreign investments in the form of patents, trade-marks and the like

It should be borne in mind in this connection that the attitude in Europe toward America from 1918 onward was one of uncertainty and distrust. The attitude in Europe, and particularly in the Western European countries, is instead one of respect and hope. American "know-how" can save Europe and that is the persistent view of the many people who have come from these parts and talked to me in my office. The mere fact that a volume of patents and trade-marks has not appeared in these countries in the name of American inventors and owned by American corporations is fully explained above. It is solely due to the difficulties of reorganization in the Patent Offices, the shortages of personnel and other shortages such as paper. When these things straighten up the picture will change. Equally with this change will come a renewed desire on the part of the foreign nations to consume American goods.

Those countries which were so heavily visited with our armies, particularly, have found the merits and advantages of what we make and what we sell. Anyone who was overseas in the Army will confirm this and the desire of these peoples abroad for our goods is one of the best advertising media that we could have. But if we wait until we see what countries are going to stay strong, what countires are going to stay unfettered from foreign controls and what countries are going to regain a sound economic stability, it may be too late to take advantage of the patent and trade-mark laws and it may be too late to enter into the field since someone else may have been more on their toes. As was evidenced after the first World War, a period of chaos, such as we have had in Europe, quickly is dissolved and suddenly one day we find normal procedure and thus normal markets.

This is a good time, therefore, to examine your overseas situation and look towards your future markets now since later you may find that you have lost valuable ground which you cannot regain.

FOREIGN BRIEFNOTES

Italy

The Court of Appeals upheld as a valid trade-mark the word "Millefiori" (Thousand Flowers) for soaps, cosmetics and like goods as not being descriptive since, while the statement "Thousand Flowers" might indicate the character of the goods in the form of perfume, such a quality, i.e., perfume, is not essential in a toilet soap and could be omitted. Also, the word could be considered fantastic in origin since in reality no composition exists consisting of a thousand flowers.

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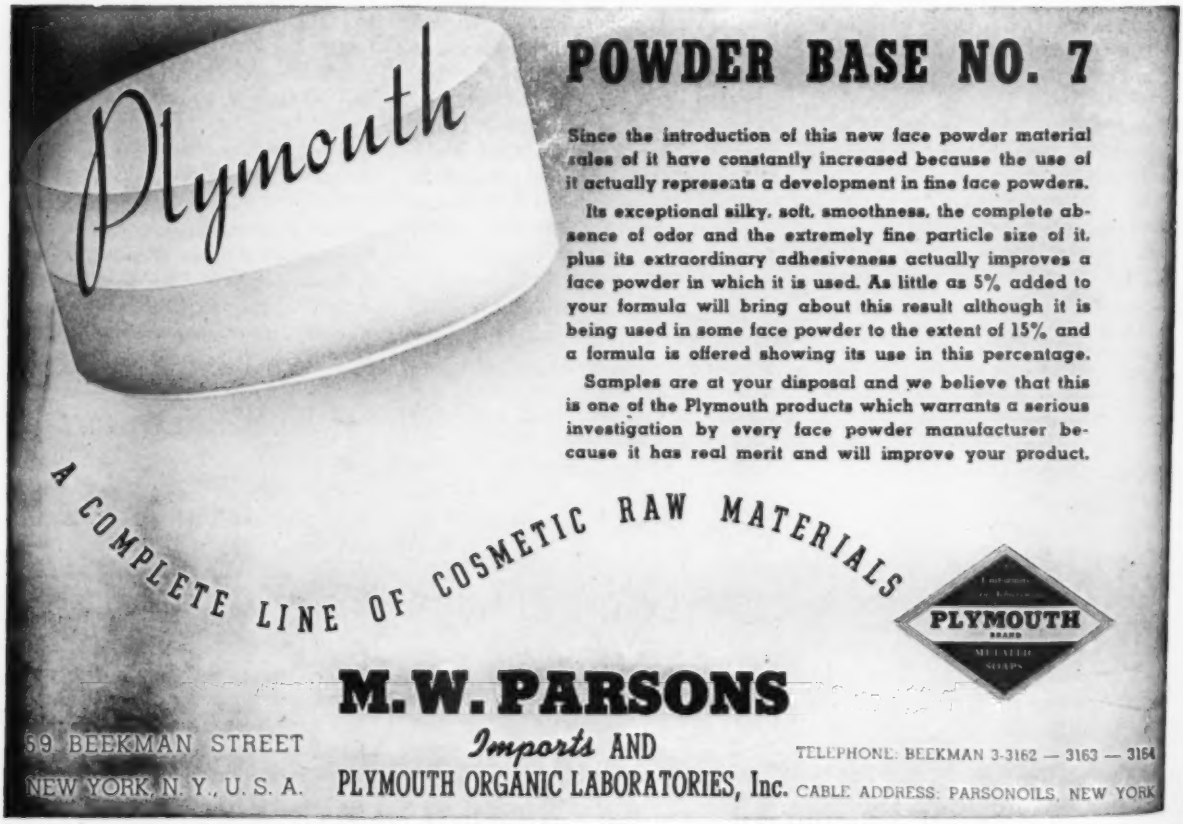
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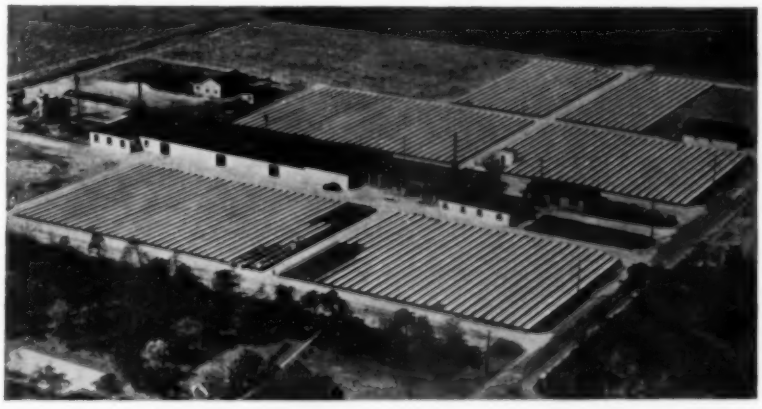

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Patent Thoughts and Trends

By THOMAS CIFELLI, Jr., Patent Attorney

Bacteria Inoculant Held Invalid

In another of its split decisions, the United States Supreme Court recently invalidated claims to an inoculant composition suitable for fixing nitrogen in various plants. The justices of the high court not only split on the question of whether the claims were valid or not, but one of the justices who agreed with the majority of the court that the composition claims were invalid felt impelled to write a concurring opinion in which he disagreed with the reasoning used by the majority to arrive at their decision. He even implied that if the reasoning of the majority is followed through it would justify upholding the patent here but would lay the basis for denying patentability to a large area within existing patent litigation. Confusing, isn't it?

The case in question involved the product claims of U. S. Patent Number 2,200,532 issued to Bond in 1940 for a Bacterial Inoculant for Leguminous Plants. As we know, such plants are able to take nitrogen from the air and fix it in the plant for conversion to organic nitrogenous compounds. The ability of these plants to fix nitrogen from the air depends on the presence of bacteria of the genus Rhizobium which infect the roots of the plant and form nodules on them. These root-nodule bacteria of the genus Rhizobium fall into at least six species. No one species will infect the roots of all species of leguminous plants. But each will infect well-defined groups of those plants. Each species of root-nodule bacteria is made up of distinct strains which vary in efficiency. Methods of selecting the strong strains and of producing a bacterial culture from them have long been known. The bacteria produced by the laboratory methods of culture are placed in a powder or liquid base and packaged for sale to and used by agriculturists in the inoculation of the seeds of leguminous plants. This also has long been well known.

It was the general practice, prior to the Bond patent, to manufacture and sell inoculants containing only one species of rootnodule bacteria. The inoculant could therefore be used successfully only in plants of the particular cross-inoculation group corresponding to this species. Thus if a farmer had crops of clover, alfalfa, and soy beans he would have to use three separate inoculants. There had been a few mixed cultures for field legumes. But they had proved generally unsatisfactory because the different species of the Rhizobia bacteria produced an inhibitory effect on each other when mixed in a common base, with the result that their efficiency was reduced. Hence it had been assumed that the different species were mutually inhibitive. Bond discovered that there are strains of each species of root-nodule bacteria which do not exert a mutually inhibitive effect on each other. He also ascertained that those mutually non-inhibitive strains can, by certain methods of selection and testing, be isolated and used in mixed cultures. Thus he provided a mixed culture of Rhizobia capable of inoculating the seeds of plants belonging to several cross-inoculation groups.

In short, as a practical matter, Bond furnished a multi-purpose inoculant for the farmer. The latter need not buy six different packages for six different crops. He could buy one package and use it for any or all of his crops of leguminous plants. Dealers and manufacturers also benefited because of a smaller inventory possible through the six-in-one inoculant.

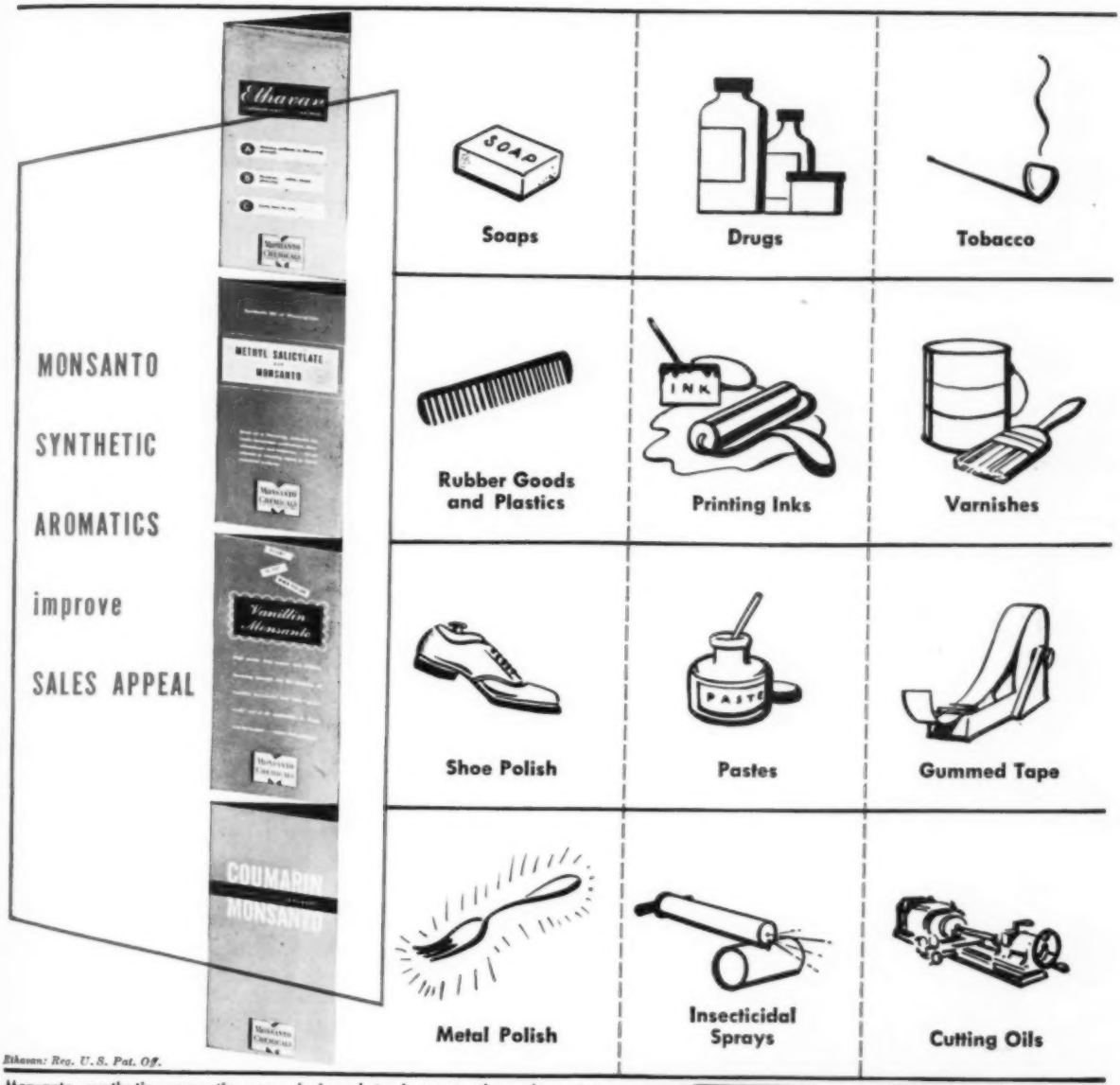
The majority of the court, speaking through Justice Douglas, (who it will be recalled wrote the "flash-of-genius" decision some years ago) had some nice things to say about Bond's invention, but this must have been of little comfort to the patentee in view of the court's holding as to validity. On this all-important issue, Justice Douglas reasoned as follows:

1. Bond does not create inhibition or inhibition in the bacteria.
2. Their qualities are the work of nature and hence unpatentable.
3. Bond discovered a law or phenomenon of nature.
4. If there is to be invention from Bond's discovery, it must come from the application of the law of nature to a new and useful end.
5. Bond's composition is an application of his newly-discovered principle and is "*hardly more than an advance in the packaging of the inoculants.*" Emphasis added.

Mr. Justice Frankfurter thought that the claims in issue were invalid because they did not adequately identify the strains of bacteria which brought about the desired results. In other words, Justice Frankfurter thought there was a technical defect in the language of the claims. What the learned justice thought of the law of nature reasoning may be seen from the following quotation:

"It only confuses the issue, however, to introduce such terms as 'the work of nature' and the 'laws of nature.' For these are vague and malleable terms infected with ambiguity and equivocation. Everything that happens may be deemed 'the work of nature,' and any patentable composite exemplifies in its properties 'the laws of nature.' Arguments drawn from such terms for ascertaining patentability could fairly be employed to challenge almost every patent. On the other hand, the suggestion that 'if there is to be invention from such a discovery, it must come from the application of the law of nature to a new and useful end' may readily validate Bond's claim. Nor can it be contended that there was no invention because the composite has no new properties other than its ingredients in isolation. Bond's mixture does in fact have the new property of multi-service applicability. Multi-purpose tools, multi-valent vaccines, vitamin complex composites, are examples of complexes whose sole new property is the conjunction of the properties of their components."

Two of the justices agreed with Justice Frankfurter that the subject matter of the claims satisfied the statutory requirements of invention and discovery. They pointed out that the products were a prompt and substantial commercial success and filled a



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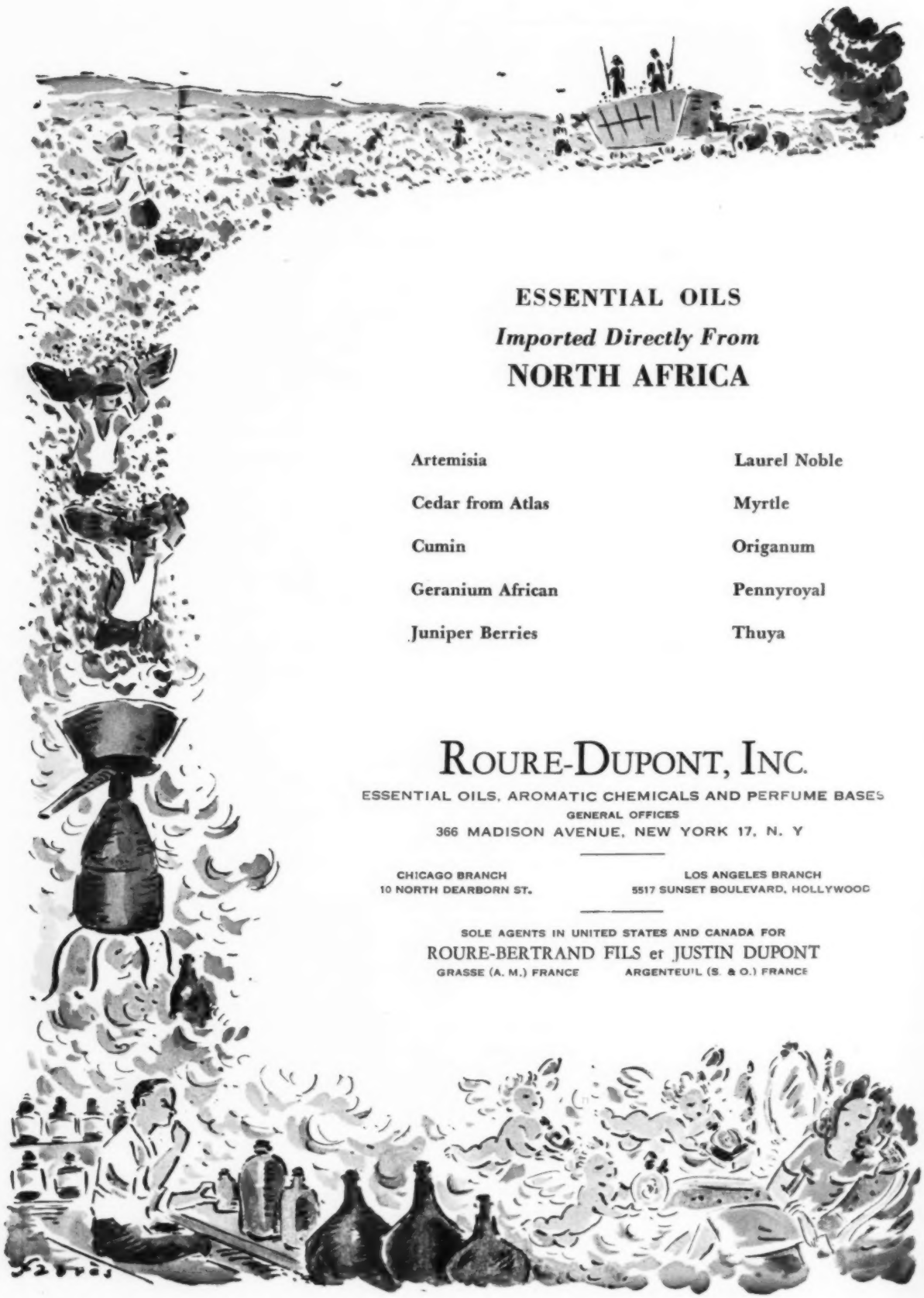

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long-sought and important agricultural need. Since they also felt that the claims were defined as completely as the nature of the case warranted, these latter two justices thought the claims should be upheld.

Amphetamine Sulphate

This drug is used synergistically with atropine sulphate in amplifying the effect of the small dose of atropine sulphate on the anatomical nervous system. Atropine sulphate is also included for its slight stimulating effect which may counteract the depressing effect of the previous drugs 1 and 2 (sodium iso-amyl ethyl barbiturate and scopolamine hydrobromide). In small doses it does not have much effect. Drugs 1 and 2, without some offsetting stimulant, may induce a slight depressing effect. This will be offset, however, by atropine sulphate. There has been no impairment of efficiency, or sensitivity to this drug, noted on the individuals tested.

The first two drugs (sodium-iso-amyl ethyl barbiturate and scopolamine hydrobromide) act more or less as stabilizing agents.

The fourth ingredient (amphetamine sulphate) is an anti-depressant.

Skin-Protective Creams

A reading of U. S. 2,435,005 would indicate that it ought to be possible to put on a bathing suit and loll around for hours without being bothered by insects or getting a sunburn. This patent, owned by West Disinfecting Company, was obtained recently on an invention made by W. F. Huppke and A. L. Sodergreen.

The invention involves the use, as carrier or vehicle, of adsorbent materials such as finely divided clay, kieselguhr, diatomaceous earth, aluminum hydrate or silica gel. The active ingredients are intimately admixed with the adsorbent. The active ingredients may be insect repellents, light screening compounds, or a combination of both. Creams or ointments containing the adsorbent and active ingredients are made up.

The resulting protective cream or ointment is said to dry promptly when applied, to provide an elastic covering film that adheres tenaciously to and flexes with the skin without the likelihood of washing off by perspiration or externally applied moisture. The protective function lasts for many hours without inhibiting transpiration; it may be readily washed off with a warm soap solution.

The following tabulations are taken from the patent. First is given a typical formula of insect repellent ointment or cream, the proportions of the respective ingredients being stated by weight, said tabulation also giving substantially the maximum and minimum limits of variations in said proportions.

	Minimum	*Maximum*	*Typical*
Silica Gel	5	15	7.3
Repellent (Dimethyl Phthalate)	10	30	27.0
Ethyl Cellulose	10	15	13.2
Shellac	5	15	10.0
Isopropanol	20	30	21.0
Acetone	20	30	21.0
Wetting Agent (Duponol)	0.5	1	0.5

A typical formula to serve both as an insect repellent and as a light screening ointment or cream, as well as the limits of maximum and minimum proportions of the ingredients is as follows:

	Minimum	*Maximum*	*Typical*
Silica Gel	5	15	7.3
Repellent (Dimethyl Phthalate)	7	20	18.0
Menthyl Salicylate	3	10	9.0
Ethyl Cellulose	10	15	13.2
Shellac	5	15	10.0
Isopropanol	20	30	21.0
Acetone	20	30	21.0
Wetting Agent (Duponol)	0.5	1	0.5

A formula of ointment or cream, preferred as a protection against actinic rays, but not especially as an insect repellent, might have the following proportions by weight:

	Minimum	*Maximum*	*Typical*
Silica Gel	5	15	7.3
Light screening material (menthyl salicylate)	3	10	9.0
Plasticizer (dimethyl phthalate)	7	10	9.0
Ethyl Cellulose	10	15	13.2
Isopropanol	20	30	21.0
Acetone	20	30	21.0
Wetting Agent (Duponol)	0.5	1	0.5

Anti-Tubercular Compounds

W. H. Feinstone and H. L. Friedman invented a family of new chemicals which are said to inhibit the growth, devitalize, or render harmless Mycobacterium tuberculosis, with or without the presence of such inhibitory substances as peptones, serum, pus and p-aminobenzoic acid. The new compounds are indicated to be useful in the treatment of human beings infected with tuberculosis.

The new compounds are protected by U. S. Patent 2,433,267, assigned to Pyridium Corporation. They are derivatives of pyridine and salts thereof. Examples of some of the specific compounds are 2-methoxyethoxy-5-aminopyridine, 2-ethoxyethoxy-5-aminopyridine, 2-butoxyethoxy-5-aminopyridine, and 2-methoxyethexy-5-acetaminopyridine. The inventors prefer to use the salts in place of the free bases, as the latter are unstable and become discolored on standing.

An idea of the activity of some of the compounds against Mycobacterium tuberculosis is given by the following table, reproduced from the patent:

Name of Compound	*Highest dilution showing bacteriostasis*
2-methoxyethoxy, 5-aminopyridine	1/200,000
2-ethoxyethoxy, 5-aminopyridine	1/200,000
2-butoxyethoxy, 5-aminopyridine	1/25,000
2-methoxyethoxy, 5-acetaminopyridine	1/6,250
2-methoxyethoxy, 5-nitropyridine	1/25,000

Other Patents

U. S. 2,433,008—**Gulf Research-2, 6-di-Tertiary-Butyl-3-Methycyclohexanol.**

U. S. 2,433,056—**Johnson & Johnson—Sterile Packaging Method.**

U. S. 2,433,064-2,433,232—**Western Condensing Co.—Riboflavin from Lacteal Material.**

U. S. 2,433,106—**du Pont—2, 4-Dinitrophenyl Thiocyanate as a Fungicide.**

U. S. 2,433,141—**M. M. McPherson—Hair Curler.**

U. S. 2,433,219—**International Minerals & Chemical Corp.—Glutamic Acid Manufacture.**

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Industry's Books

Textbook of Human Physiology, by William F. Hamilton, Ph.D., Professor of Physiology, University of Georgia School of Medicine, 504 pp., Illus., F. A. Davis Co., Phila., $6.

The aim in preparing this textbook is to present in the simplest possible manner the general principles of human physiology. The work is divided into the following 32 chapters: The process of Excitation. Response to Excitation. The Transmission of Excitation. The Organization of Reflex Pathways. Afferent Pathways in man. The Efferent Pathways. General Functions of the Central Nervous System. General Function of Receptors. Cutaneous Sensibility and Pain. The Sensation of of Taste and Smell. Posture and Equilibrium. Hearing. Radiation and Vision. Hunger, Thirst, Libido, and the Conscious Interpretation of Sensation. The Ventilation of the Lungs. Respiratory Functions of the Blood. Abnormalities in Respiration. The Blood. The Pumping Action of the Heart. The Action Currents of the Heart. Arterial Pressure Pulses. Bloodflow to the Individual Organs and Its Measurement. Measurement and Regulation of the Circulation Rate. The Regulation of the Mean Blood Pressure. Insufficiency of the Circulation. Congestive Failure of the Circulation. The Digestive Movements. Digestive Absorption and Secretion. The Fluids of the Body. The Functions of the Kidney. Metabolism. The Endocrine System.

Industrial Weighing, by Douglas M. Considine, Chemical Engineer, 553 pp., Illus., Reinhold Publishing Corp., New York, $10.

Weighing is one of the most important daily undertakings of industry and commerce. This book is written to fill part of the wide gap in the literature devoted solely to scales and weighing. For maximum convenience and usefulness, the book is divided into two parts, namely: Part I—"Scale Design, Construction, and Operation," and Part II—"Scales in the Industries." For those readers who desire a review of basic scale installation and maintenance, Part I is recommended. For those readers interested in the application of scales, Part II is recommended. Of particular interest to this industry is Chapter 10: Chemical Industries . . . Drugs and Pharmaceuticals: Cost Accounting, Compounding and Processing, Filling and Packaging, Shipping . . . Soap and Toiletries: Soap Manufacture, Lotion Preparation, etc.

Research In Industry, Its Organization and Management, by C. C. Furnas, Director, Cornell Aeronautical Laboratory, Editor, 574 pp., Illus., D. Van Nostrand Co., New York, $6.50.

This volume was written by representatives of various member companies of Industrial Research Institute, Inc., which has as its objectives: To promote, through the co-operative efforts of its members, improved, more economical and more effective techniques of organization, administration, and operation of industrial research: To stimulate and develop an understanding of research as a force in the economic, industrial and social activity of the nation; and to promote high standards in the field of industrial research. This group of writings is a step toward the fulfillment of those objectives. Through publication, the thoughts and experiences of a number of successful executives with long-standing research experience, representing a good cross-section of American industry, are made available to those who may have an interest in the organization and management of industrial research activities. This is not a management recipe book. But there are certain principles and experiences which have repeatedly proved to be applicable and valuable. A number of them are presented in this volume.

Pharmacology and Experimental Therapeutics, a survey for 1941-1946, by Hamilton H. Anderson, Fumiko Murayama and Benedict E. Abreu, 368 pp., University of California Press, Berkeley, $6.50.

The present survey is an attempt to bring together significant studies in the field of applied pharmacology and toxicology. Quantitative data only are included, in an effort to relate dosage to specific effect. Whenever blood or other tissue levels of an effective agent are reported, these are listed. Each medicinal agent is recorded under its accepted name, and whenever synonyms or chemical names are known, they are given. In vitro effects and in vivo activities in the several species and especially in man are summarized. Beneficial as well as harmful effects produced by known amounts of biologics or chemicals are recorded briefly. Biologic tests used to identify agents, and chemical technics utilized for detecting important drugs or poisons in body fluids or tissues, are listed also. Under each agent included in the survey, there is first noted the species, or, if that terminology is not applied, then the technic for identification or other test or characteristic; second, the effect produced; third, the dose level; fourth, other data on the effects produced, whether beneficial or harmful; fifth, the author, reference source, volume of journal, page, and year of publication. A conscientious effort has been made to cover not only medical literature, but also the literature of experimental biology, veterinary medicine, dentistry, pharmacy, and related special fields as well.

The Sulfonamides and Allied Compounds, by Elmore H. Northey, Ph.D., Administrative Director, Stamford Research Laboratories, American Cyanamid Company, American Chemical Society Monograph Series 106, 660 pp., Reinhold Publishing Corp., New York, $12.50.

This monograph attempts to cover the chemical side of the new chemotherapy which has revolutionized medicine in recent years. Progress has been so rapid and the number of new compounds synthesized (now over 5000) so great, that it has been all but impossible for chemists active in the field to keep up with developments. Duplication of effort has been enormous. It is hoped that by listing most of the compounds that have been made as the result of the discovery of antibacterial properties of sulfonamides and related compounds, some of the waste of duplication can be avoided and the assembled information can be used as background for further conquest of disease. It is also an aim of this monograph to provide pharmacologists and clinicians with data on activities and sources of information on other important properties of the drugs. A further aim is to provide all research workers in the field with a brief summary on medical uses and abuses of these drugs.

Compounder's Corner

Hand Preparations

In a brief discussion of hand lotions, creams and jellies in the Perfumery and Essential Oil Record (*38: 419, 1947*), *it is remarked that no matter how one may try to substitute, the fundamental ingredient to whiten and soften hands is glycerine. Thus a lotion which will always sell and is simple to make consists of equal parts of glycerine, witch hazel and rose water. Glycero-gelatin made to the correct consistency witch sufficient water and rose water is another product with sound marketing possibilities.*

Liquid creams of the emulsion type must be good white, stable emulsions if they are to remain popular. To do their work of softening, whitening and soothing the hands, a vegetable oil should be present in preference to mineral oil. A "very good" product can be made from the following formula:

Stearic acid, triple pressed	10
Glycerol monostearate	2
Vegetable oil	15
Distilled witch hazel	15
Glycerine	8
Distilled water	50

A small amount of rose perfume may be used and preservatives are needed.

A good but simple hand jelly can be made from gum tragacanth and glycerine, such as the following:

Tragacanth, 2% mucilage	50
Glycerine	20
Distilled witch hazel	20
Alcohol	10

This can be colored with a water-soluble dye, perfumed and must be preserved. Modifications of this formula can be made, with or without the addition of distilled water to give the desired consistency.

Vanishing Creams

Vanishing creams of the stearate type, says F. Winter in *Soap, Perfumery and Cosmetics* (21:42, 1948) are generally composed of partly saponified stearic acid, with the addition of a lubricant like glycerine, mineral oil, petrolatum, etc., and always contain considerable amounts of aqueous vehicle. They are typical emulsions of the oil-in-water type. In their simplest form they represent the "dry" or non-fatty vanishing creams, but they lend themselves to modification on a very extensive scale. If not the essential basis, such creams are nearly always an important component of many other modern cosmetic cream complexes.

Of the several alkalies used in making such creams, Winter feels that potassium carbonate is undoubtedly the best agent for the purpose. It yields stearates of perfectly smooth appearance, which are stable indefinitely. An improved procedure, which yields better results, is described by this European authority. He points out that carbonate emulsions require, owing to their voluminous evolution of carbon dioxide, vessels of about three times the capacity of the weight of cream to be prepared in them. In order to reduce the risk of overflow, a concentrated emulsion is prepared in the following manner:

(1) The fats and waxes are melted on a water bath in a suitably large vessel.

(2) Meanwhile the potassium carbonate is dissolved in a small quantity of the water (3 or 4 grams of water to 1 gram of potassium carbonate).

(3) The remainder of the water is brought to a boil and the borax dissolved, together with any other suitable materials that have to be added (preservative). This solution is kept hot.

The hot potash solution is now poured slowly and in small quantities on to the melted fats, stirring continually and observing the customary precautions to avoid overflow. As soon as the evolution of carbon dioxide ceases, the whole of the boiling borax solution is added, stirring vigorously; finally the emulsion is heated, while stirring, and—when still boiling—withdrawn from the source of heat. The vessel is now plunged into cold water and the stirring continued until the cream begins to thicken. The perfume is now added and the stirring continued until the cream is thick and homogeneous.

This procedure is utilized, for example, in the following simple basic formulas for making dry or medium dry vanishing creams of the stearate type One such, made with lanolin, consists of:

Stearic acid	150
Lanolin, anhydrous	10
Mineral oil	20
Potassium carbonate	15
Water (boiling)	50
Borax	8
Sodium benzoate	2
Water (boiling)	750

Another, with cetyl alcohol, is made from:

Stearic acid	150
Lanolin	5
Petroleum jelly	15
Cetyl alcohol	10
Potassium carbonate	15
Water (boiling)	50
Borax	7
Water	750

The fat content of a dry, non-fatty type of cream may vary from 4.5 to 10 per cent. A medium fat content for a cream of excellent quality is approximately 7 to 8 per cent. Creams with a fat content of from 10 to 13 per cent yield preparations of extra density which, while still leaving a matt film on the epidermis, grease slightly and thus exert a lubricant effect. From a fat content of 14 to 16 per cent semi-fatty creams result.

When referring to the "fat" content of a cream, it is understood that this refers to the total amount of petroleum jelly, fatty oils of all kinds, mineral oil, cocoa-butter, lanolin and the like.

Illustrative is the following stearate cream of 10 per cent fat content:

Stearic acid	150
Mineral oil	60
Petroleum jelly	40
Cocoa butter	10
Lanolin, anhydrous	5
Beeswax, white	10
Glycol stearate	12
Potassium carbonate	15
Water (boiling)	50
Borax	8
Water (boiling)	800

Continuing his discussion on the

progressive increase in the fat content, Winter next describes stearate creams of semi-fatty type. Products of this type contain from 20 to 30 per cent of fats. On application, they will be found to grease the skin slightly. A little higher on the scale is the following semi-fatty cream with a 33 per cent fat content:

Stearic acid	**60.0**
Cocoa butter	**20.0**
Beeswax, white	**20.0**
Spermaceti	**10.0**
Lanolin, anhydrous	**5.0**
Mineral oil	**115.0**
Petroleum jelly	**65.0**
Glycol stearate	**30.0**
Potassium carbonate	**12.0**
Water (boiling)	**40.0**
Borax	**5.0**
Sodium benzoate	**1.5**
Water (boiling)	**280.0**

To the category of fatty stearate creams belong products of 35 per cent fat content and over. The film left behind is frankly greasy, but a 40 to 50 per cent fat content is usual for this type of cream. Fatty stearate creams possess notable differences from the cold cream type of low water content, especially in view of the comparative fineness of the fatty film left on the epidermis and naturally enough, also in their cosmetic effect. A further property of these fatty stearate creams is their rapid absorption by the skin, owing to the high degree of dispersion of the fatty particles. An illustrative formula for a stearate cream with a 40 per cent fat content is as follows:

Stearic acid	**70.0**
Mineral oil	**100.0**
Petroleum jelly	**100.0**
Cocoa butter	**30.0**
Beeswax, white	**30.0**
Lanolin, anhydrous	**10.0**
Glycol stearate	**45.0**
Potassium carbonate	**10.0**
Water (boiling)	**40.0**
Borax	**6.0**
Sodium benzoate	**0.5**
Water (boiling)	**340.0**

Winter notes that while most consumers prefer creams of opaque texture and matt appearance, there still exists a demand for pearly creams. With such creams the nacreous effect appears within 8 to 10 days after manufacture. Illustrative is triethanolamine cream made as follows: Melt 44 grams of stearic acid, then add 20 grams of triethanolamine. Stir without heating until pasty in appearance. A solution of 3.5 grams borax in 400 grams of water is then added, the triethanolamine stearate dissolved therein and the solution kept warm. Separately melt together 130 grams of stearic acid and 25 grams of mineral oil. Then pour the soapy borax solution on to the melted fats. Cool and stir, etc.

Pearly cream bases are available commercially which by simple heating with an appropriate fat mixture, yield pearly creams. A dry pearly base of this sort consists of:

Powdered neutral sodium soap	**20**
Triethanolamine	**20**
Sterate acid	**50**

Dissolve the powdered soap in the melted stearic acid. Add the triethanolamine, stirring without heating. Pulverize after cooling.

A cream prepared from such a base consists of:

Dry base	**90**
Stearic acid	**100**
Mineral oil	**20**
Petroleum jelly	**5**
Water	**500**
Borax	**5**

Dissolve the base and the borax in water. Keep hot. Melt the stearic acid and the mineral oil together, then add the hot borax solution while stirring. Cool and stir, etc.

Better Glycerine Suppositories

To obtain firmer and more satisfactory glycerine suppositories, C. Blum and H. Kasermann (Pharm. Acta Helvet. *22: 204, 1947*) *now recommend the use of the following glycerine-gelatin preparation:*

Gelatin	**14 parts**
Water	**21 "**
Glycerine	**65 "**

Tetrahydrofurfuryl Acetate in Cosmetics

The discovery that tetrahydrofurfuryl acetate, now available commercially, has powerful solvent properties for halogenated fluorescein led to investigation into its use in lipstick formulation. Patent applications covering such uses have been made in the United States and several other countries. According to E. S. Lower (*Manuf. Chem. & Manuf. Perf.* 18:500, 1947), this acetate is miscible with most oils, fats and waxes used in cosmetic formulations. It can be employed in conjunction with the usual lakes, toners, oil-soluble dyestuffs and many inert pigments. While it is of particular interest when lipsticks are being formulated, this is true to a larger degree also in the production of cream rouges and perfumery manufacture. The solvent imparts excellent staining properties and is reported to reduce risk of eosin dermatitis attributed to the action of undissolved eosin on the lips. It also aids in the preparation of well-plasticized malleable lipsticks because of its natural plasticizing properties, giving greater durability and eliminating crumbling. Bleeding or sweating out of the lipstick does not occur, and its high boiling point indicates that no lipstick storage troubles due to evaporation are to be expected.

The following is illustrative of the procedure found suitable for preparing satisfactory lipsticks containing this acetate:

2 parts by weight 4.5-di-bromo-3.6-fluorandiol.
10 parts by weight tetrahydrofurfuryl acetate.

are warmed to 60°C. and this solution is added to:

40 parts by weight beeswax.
20 parts by weight castor oil.
20 parts by weight cocoa butter.
5 parts by weight lanolin.
0.1 parts by weight anti-oxidant.

previously heated to 70°C., when a clear solution results. Suitable amounts of inert pigments or lakes may be added with continual agitation and cooling. The mass should then be passed over a roller mill or preferably through a colloid mill at a clearance of 0.003 inch. After this the lipstick mass is re-melted to approximately 64°C. and poured into chilled molds.

An example of cream rouge formulation utilizing the acetate is:

	Parts by weight.
Cetyl alcohol	**3**
Cocoa butter	**3**
White beeswax	**3**
Spermaceti	**5**
Lake	**3**
Eosin	**2**
Petroleum jelly	**50**
Absorption base (viscous)	**20**
Tetrahydrofurfuryl acetate	**10**
Perfume and preservative	**sufficient**

The manufacturing routine is the same as for the lipsticks. The preparation must be passed through a colloid mill.

Lower also notes that this solvent when used in quantities of the order of 2-10 per cent in toilet waters and alcoholic perfumes, helps to produce true solutions and has even been found to enhance the fragrance and persistence of the perfumes.

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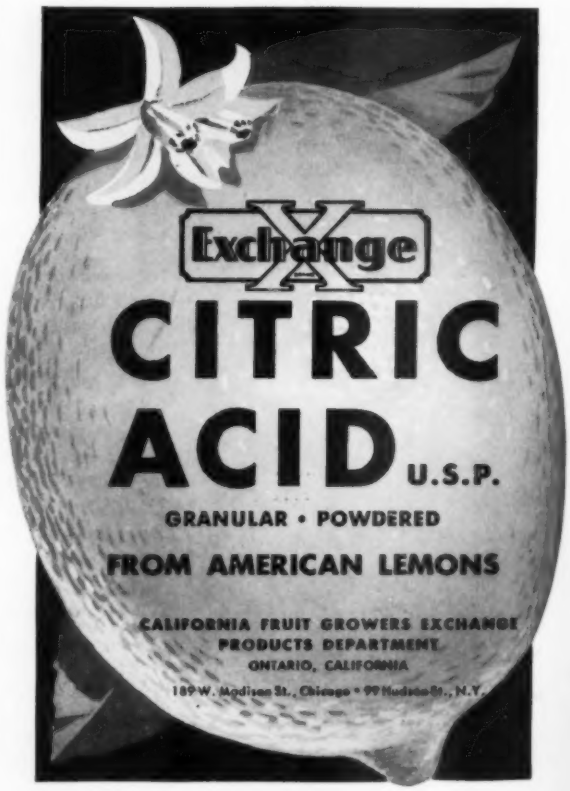

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Advancing Therapy

Treatment of Occupational Dermatoses

In a comprehensive discussion of the diagnosis, disability and treatment of occupational dermatoses, J. J. Downing (*New England J. Med.* 237: 755, 1947) states that wet dressings should be the first topical remedy. Powders cool and dry the skin, and while protecting it from external irritation permit heat radiation. The combination of alternate wet dressings and dusting of the surface with powder quickly relieves the congestion. The mineral powders are better than the vegetable. If there is no marked redness or swelling, lotions may be applied immediately or within twenty-four hours. For a universal standby, Calamine Lotion (*National Formulary*), with 1 per cent phenol, is useful, but Downing feels that the physician should not limit himself to a single prescription, for as each eruption and skin varies, so should the local application. Properly prescribed and applied, lotions produce the best results. Where a suspension of a powder in fluid is used, it should be shaken well and spread or evenly sprayed over the skin.

Downing uses a number of preparations in the treatment of various occupational dermatoses. For example, when there is considerable secretion and danger of infection from the nature of the work (such as sensitization from soluble cutting oils), the following formula is useful:

Calamine	20 Gm.
Zinc oxide	20 "
Boric acid	10 "
Glycerin	5 cc.
Bentonite	2 Gm.
Lime water to make	250 cc.

For the erythematous, squamous eruption, such as that seen after contact with irritating dusts, fumes or resins, the following may be used:

Phenol	2 Gm.
Zinc oxide	30 "
Calamine	30 "
Starch	30 "
Glycerin	30 cc.
Distilled water, to make	250 "

When there is marked pruritus, additional anti-pruritics may be added, such as the following:

Menthol	0.6 Gm.
Phenol	1.2 "
Solution of coal tar	8.0 cc.
Calamine lotion, to make	250.0 "

Coal-tar solution is much more satisfactory for the preparation of lotions and liniments if made with 70 per cent alcohol instead of 95 per cent. The addition of the cuti-colored neocalamine in sufficient amount to match the patient's skin makes a more pleasing preparation. Neocalamine, however, stains clothing and bed linen. For the relief of an intensely itchy follicular eruption, seen after contact with rubber or mica, when there is no evidence of infection, the following lotions are valuable:

Menthol	0.6 Gm.
Phenol	1.2 "
Solution of coal tar	10.0 cc.
Zinc oxide	20.0 Gm.
Talc	20.0 "
Glycerin	15.0 cc.
Alcohol (35 per cent) to make	250.0 "

Menthol	0.5 Gm.
Solution of coal tar	15.0 cc.
Glycerin	10.0 "
Witch hazel	100.0 "
Solution of boric acid, to make	240.0 "

When the lips become chapped and fissured, bathing with the following is beneficial:

Solium borate	6 Gm.
Tincture of myrrh	20 cc.
Water, to make	250 "

If there is any evidence of pyogenic infection the following formula can be used:

Menthol	0.5 Gm.
Phenol	1.0 "
Ichthammol	7.5 "
Zinc oxide	30.0 "
Olive oil	100.0 cc.
Lime water, to make	250.0 "

Wetting agents, such as sodium lauryl sulfate, are valuable additions to liniments. Their effectiveness is based on their power to reduce surface tension between the solid and the solvent, thus permitting penetration and dispersion of the solid. The following formula is smooth and efficient:

Zinc oxide	15.0 Gm.
Calamine	15.0 "
Olive oil	60.0 cc.
Solium lauryl sulfate	5.0 Gm.
Phenol	0.5 "
Water, to make	250.0 cc.

Quinidine in Cardiac Disease

In the opinion of R. L. McMillan and C. R. Welfare (*J.A.M.A.* 135: 1132, 1947) quinidine sulfate is the most useful drug available for the restoration of normal rhythm in patients with auricular fibrillation. The use of quinidine is attended by certain dangers, but in general the incidence of serious cardiovascular accidents in patients treated judiciously with the drug is little, if any, greater than in similar patients treated without quinidine. In their report of 50 unselected patients with chronic auricular fibrillation treated with quinidine sulfate, 44 (88 per cent) were restored to normal rhythm. At the time their report was written, the rhythm had remained regular in 20 (56.8 per cent) of these patients for periods ranging from four weeks to two years after the drug was started. The return to normal rhythm is accompanied, in a large percentage of patients, by definite subjective improvement. Objective signs of increased cardiac efficiency are often seen, but improvement in various tests of function, such as vital capacity, has not been consistent. Patients with rheumatic heart disease and patients with any type of heart disease whose auricular fibrillation reverts to normal rhythm on small doses of quinidine show a more noticeable tendency to maintain normal rhythm than do others. However

good results have also been obtained in other types of patients. There is no method of ascertaining what response is to be expected in a given patient.

Intravenous Procaine

In a report in the *Canadian Medical Association Journal* (57:350, 1947), K. A. Kraft states that procaine has been used intravenously at his hospital since December 1944 in a total of 870 cases. It has been employed in all types of anesthesia. The procaine for intravenous use has been used in a 1:1,000 solution prepared by adding 1 Gm. of procaine to 1,000 cc. of isotonic sodium chloride solution, 5 per cent dextrose in isotonic sodium chloride solution or distilled water. The 1:1,000 solution is preferred because "pentothal," analeptics, curare or d-tubo-curarine can be added to the solution or injected into the tubing without danger of an injurious precipitate being formed. He stresses that intravenous administration of procaine is a prophylactic and rapidly effective therapeutic measure for the prevention and correction of cardiac arrhythmias associated with cyclopropane anesthesia. Reduction of the gaseous agents and of the dosage of spinal drugs and intravenous "pentothal" can be accomplished by the intravenous use of procaine, particularly in patients who are poor surgical risks.

Chewing Gum and the Teeth

Although the chewing of gum is an extremely common habit, the effect of this procedure on the teeth and their supporting structures has not been satisfactorily investigated. Since there is a need for further research on the subject, a clinical and laboratory investigation was designed by J. F. Volker (*J. Am. Dent. Asso.* 36:23, 1948) to test the effect of gum chewing on the incidence of dental caries. Likewise, since it seemed opportune, preliminary observation as to the effect of gum chewing on the gingivae, calculus formation and biting pressure were included as a part of the study.

The effect of chewing gum was studied under carefully controlled conditions. It was found that gum chewing did not increase dental caries nor did it influence gingival inflammation or the formation of calculus under the conditions of this experiment. In this experiment the chewing of gum was without effect on biting pressure. By use of a simplified method of control the chewing of gum was shown to remove on an average 80 per cent of residual oral debris

Thiouracil in Angina Pectoris

Thiouracil, the drug now widely used in treating thyroid disease, may have value in other conditions. For example, R. L. Fisher and M. Zuckerman (*Michigan State Med. Soc. J.* 46:1059, 1947) used thiouracil in 16 cases of angina pectoris and obtained good results in 14 of these patients. When employing this drug it is desirable to give the smallest dose that will keep the symptoms at a minimal level. To detect early toxic manifestations the patient should be seen at three to four day intervals during the first three weeks of therapy and at weekly intervals for approximately one month afterward. If severe anemia and leukopenia develop, thiouracil therapy should be continued with small doses; if the condition does not correct itself, therapy should be discontinued. When myxedema develops, the drug should be reduced until the condition is corrected. While administration of thyroid extract tends to correct myxedematous states, the beneficial effect of thiouracil is correspondingly decreased. In this study the average number of days from the time of initial treatment until there was a subjective improvement was 13.3 days.

Toxicity of Combined Antimalarials

In the treatment of malaria quinacrine, quinine and pamaquine have been employed jointly with the supposition that a combination of these may be more effective than the individual drugs. By means of intraperitoneal injections in mice, G. Chen and E. M. K. Geiling (*J. Pharmacol. & Exper. Therap.* 91: 133, 1947) investigated the acute lethal toxicities of quinacrine and quinine, quinine and hydroxyethylapocupreine, quinacrine and pamaquine, quinine and pamaquine, quinine and pentaquine. It was found that the combinations of these antimalarials are different in their joint toxicity: (1) quinacrine and quinine, quinine and hydroxyethylapocupreine act independently and similarly (2) quinacrine in sublethal doses and pamaquine act independently but diversely. (3) Quinine and pamaquine, quinine and pentaquine are synergistic in their joint action.

Rutin and Capillary Fragility

In studies on a large number of hypertensive subjects, J. O. Griffith, Jr. and M. A. Lindauer (*Ohio State Med. J.* 43: 1136, 1947) noted an increased incidence of apoplexy and retinal hemorrhage in the patients with increased capillary fragility. Rutin was given and tests for capillary fragility became normal in 75 per cent of the patients whose tests had been initially abnormal. The initial dosage of rutin is 20 mg. by mouth three times a day. Tests for capillary fragility are repeated at regular intervals, and the dosage is increased whenever the results are abnormal. Capillary fragility and permeability, if originally increased, usually become normal after adequate dosage of rutin continued for a long enough time. It is probable that such change in the outcome of the test indicates a lessened likelihood of the development of apoplexy and retinal hemorrhage.

Combined Therapy in Arthritis

In the *Ohio State Medical Journal* (43: 1035, 1947) M. M. Szucs reports his studies on the effects of calcium succinate or succinic acid and acetylsalicylic acid in 396 patients with various forms of arthritis. The average dosage employed was 34 grains (2.2 Gm.) of calcium succinate and 45 Gm. of acetylsalicylic acid daily divided into four equal doses. In rheumatoid arthritis succinate-salicylate was combined with administration of gold salts. Among the 208 cases of osteoarthritis improvement occurred in 95 per cent. Seventeen cases of acute infectious arthritis all exhibited prompt improvement. Twenty-two of 27 cases of rheumatoid arthritis exhibited improvement with apparent arrest of arthritic activity. Eight of 15 cases of mixed arthritis showed great improvement with complete or almost complete cessation of arthritic activity. Improvement of variable degree was observed in the majority of 95 cases of spondylitis. Among 34 cases of acute rheumatic polyarthritis all evidence of rheumatic activity disappeared. Pain, swelling, tenderness and fever subsided most promptly, and residual stiffness was frequently the last symptom to disappear.

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(*Continued from page 471*)

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Newer Treatment of Fungus Infections

(*Continued from page 465*)

in combatting fungus infection of the vagina. A special preparation has been made available for this purpose. It contains 10 per cent each of calcium and sodium propionates in a tragacanth base, and buffered at a pH of 6.5 which is the pH at which these propionates have the most effective fungicidal action on *Candida Albicans*, the fungus responsible for this highly distressing condition in women.

In a group of 64 patients on whom this therapy was tried at Duke University School of Medicine and Duke Hospital, all the patients secured relief from intense itching within 76 hours. Most of the patients showed negative cultures after one series of treatments lasting two to three weeks. There was not a single instance of irritation, although a burning sensation was often reported after the first two or three applications. The jelly is applied with a special applicator.

Time may be taken out for a brief discussion of the nature of allergy to fungi, a condition which may be very baffling until its nature is recognized.

Fungi of the Trichophyton group produce a metabolite of complex composition, to which the name trichophytin has been given. This might be looked upon as an antibiotic like penicillin except that it is not known to have any useful purpose to man; on the contrary it is an allergen which is capable of causing troublesome allergic reactions.

By no means all persons with "athlete's foot" are allergic to trichophytin. However, when powerful fungicides such as phenyl mercuric nitrate or merthiolate are applied to weeping denuded surfaces resulting from fungus infection of the feet, there is an instant killing off of large numbers of trichophytons with the sudden release of a large quantity of trichophytin. This absorbed by the blood stream and results in the formation of antibodies.

The entire body is now sensitized to trichophytin and subsequent exposure to trichophytin results in an allergic reaction, which frequently takes the form of an eczematoid eruption of the hands, known as a trichophytid or as an "id" for short. These "ids" disappear only when the cause, which is the fungus infection of the feet, is removed. The "id" itself is devoid of fungi and

(*Continued on page 554*)

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Difficulties of Introducing New Essential Oils

Some interesting and valuable information was presented by E. S. Guenther and E. E. Langenau in their discussion of some newer, commercially important essential oils of the Western hemisphere. Speaking of the December, 1947 meeting of the Scientific Section of the Toilet Goods Association, they pointed out that the introduction of a new essential oil in commerce is attended with considerable difficulties. Most would-be producers seem to completely lack information on the fundamental problems involved.

Although other elements enter the picture, the problem resolves itself into four main factors. Cost is of primary importance. An oil from a new source must be competitive in price. It is for this reason that oils can seldom be produced in the United States unless they are obtained as by-products (e. g. citrus oils) or unless the plants can be harvested by machines (e.g. the peppermint and dill oils of the West). A second important factor for the successful production of a new oil is the necessity that a sufficient market exist for the new oil. A third factor to be considered is that the supply of an oil must be regular and that the quality of the oil must be uniform. It is very important that producers deliver oil of a quality comparable to that of the sample previously submitted. A fourth factor not to be overlooked is that the production of essential oils requires considerable technical ability and knowledge—in other words plain "know how."

Guenther and Langenau point out that at the beginning of the recent war, the Western Hemisphere was dependent on the rest of the world for many of its essential oil needs. Many organizations began experimental production of oils that were no longer available to the United States. Careful studies were made to determine whether or not pharmaceuticals, such as menthol, might be obtained from other botanical sources. Investigations were also undertaken to develop synthetic compounds and to evaluate these new products. In spite of the tremendous impetus afforded by world conditions, the development of new oils in North America has been very slow and halting. In South and Central America the development has been more rapid, due primarily to a cheaper labor market.

A compilation of some newer, commercially important essential oils of the Western hemisphere shows that, in spite of these difficulties, successful production of some oils is indeed possible. Data given on the several oils includes information on present and potential production, analytic data for the normal oils, and other pertinent information. Among the important essential oils now obtainable from South America are: Oil of *Ocotea Pretiosa* or Oil of *Ocotea cymbarum;* Oil of *Mentha arvensis;* Oil of Sweet Orange, Brazilian; Oil of Mandarin, Brazilian; Oil of Eucalyptus-cineole type; Oil of *Eucalyptus citriodora*; and Oil Cabreuva. Newer Central American oils include: Oil of Citronella; Oil of Lemongrass; Oil of *Eucalyptus staigeriana*; and Oil of Coriander. West Indian oils include: Oil of Neroli, Haiti; Oil of Petitgrain, Haiti; Oil of Vetiver, Haiti; and Oil of Lemongrass, West Indian. North American is producing Oil of Tangerine, Florida; Oil of Lemongrass, Florida; and Oil of Cedarwood, Texas.

Musk Sources

In a review of animal products in perfumery, E. Hardy (*Perf. & Essent. Oil Rec.* 38: 335, 1947) calls particular attention to the muskrat and the musk deer as sources of musk. Occurring wild in North America the muskrat was formerly called the Ondatra, and scientifically named *Fiber zibethicus.* Although its strong musky odor, particularly in the spring breeding season, has been known to naturalists since 1612, it is only in comparatively modern times that its secretion has been used in perfume chemistry. In 1942, Stevens and Erickson studied the secretion of the scent glands of the American muskrat and discovered the natural source of these musk odors, the value of their research lying in the abundance of the muskrat as a wild animal, most of the other animal sources of musk being scarcer.

The glands produce an unsaponifiable oil which, on fractional distillation, is separated into two principal parts, each containing large cycle alcohols, one not odorous and the other containing a small part of the corresponding odorous ketone. The alcohol of the more volatile part is known as "mor-muscol" or "axaltol," and the accompanying ketone as "nor-muscone" or "exaltone." Musk distilled from American muskrats contains 58 per cent dihydrocivettol, 40 per cent nor-muscol and 2 per cent of the two scented ketones. One American patent showed that these large cycle alcohols could be oxidized quantitatively to the corresponding ketones. Thus the reason why the older generation of chemists overlooked the muskrat before the work of Stevens and Erickson was that only a faint odor of little perfume value was obtained from the muskrat gland in its natural condition. This scent is now increased about fifty times and its perfume value greatly enhanced. In 1945 Stevens reported the isolation of two new large cycle ketones obtained from the oxidization of the natural alcohols from these scent glands.

Native in Central Asia, the little musk deer (*Moschus moschiferous*) has a sac-like gland in the skin of the abdomen near the navel, which yields the scent. When fresh this musk is soft and brown, and moist, but it soon hardens and dries, and at the same time changes from its rather unpleasant smell to that of a powerful musk. "Musk-pods" consist of the secretion removed from the dead animal and tied up in a portion of the hairy skin covering the gland. Each pod contains about an ounce of musk and is sold openly in the market in India. The gland is about the size of a hen's egg. Walbaum in 1906 isolated the odoriferous substance of natural musk in the form of a ketone which he called muscone, nine years before Sack's discovery of the somewhat similar civetone.

Despite the presence of musk in no less than seven other different mammals, only that of the muskrat and musk deer has yet found much commercial use. That of the musk deer is usually known as musk-tonquin, being very powerful and making one of the best of the fixatives. It is also used in North America for producing maple flavoring in the food industry and for raspberry flavors.

Chemical Aspects of Citrus Oil Ageing

In discussing the chemical aspects of the ageing of essential oils at the International Congress of Pure and Applied Chemistry (through *Perf. & Essent. Oil Rec.* 38: 260,1947), H. J. Strausz remarked that generally speaking, storage temperatures above 18°C., daylight, ultra-violet radiation, moisture and oxidation by air are the recognized detrimental factors which initiate or accelerate chemical conversion of certain components and deterioration of odor. Experience has shown that oils with a high content of alcohols, esters, phenols, phenolethers, oxides and certain ketones are stable on ageing, whereas oils with a large content of aldehydes and terpenes are prone to deterioration if not correctly stored, or even then after years of careful storage. Certain citrus oils are especially sensitive in this respect.

Lemon oil and orange oil deserve special attention, being produced in high quantities and consumed to a large extent in the confectionery, flavoring and cosmetic industries. Some aliphatic aldehydes, such as octylic, nonylic, decylic and duodecylic aldehyde in lemon oil easily oxidize on contact with air to the corresponding fatty acids with a somewhat rancid or otherwise objectionable odor. But the main factors in the deterioration of lemon oil are citral and *d*-limonene.

Citral, of which lemon oil contains an average of 4 per cent., is known to be a mixture of at least two isomerides, mainly of citral (geranial), and citral *b* (neral). Citral *a* amounts to some 90 per cent of the total. This is certainly the case with citral isolated from lemongrass oil, which presently is the main natural source for the production of commercial citral. However, citral isolated from lemon oil has, in spite of similar chemical constants, a distinctly milder and finer odor than the purified citral from lemongrass oil. Verley in 1926 came to the conclusion that lemon oil citral consists mainly of a special isomeride of citral to which he ascribed the name of *Gamma*-Citral. It was not until 1939 that Schmidt succeeded in the preparation of iso-citral from the acetate of the enolic form of the aldehyde which possesses the characteristic fine and mild lemon peel odor of citral isolated from handpressed lemon oil. The significance of these substances with regard to the easier deterioration of lemon oil on ageing lies in the considerably greater sensitivity of *gamma*- or *iso*-citral towards cyclization, resinification and, last but not least, conversion into *para*-cymene.

Strausz believes that the presence of about 1 per cent of faty acids, such as octylic, nonylic, decylic and duodecylic acid formed on air oxidation in badly stored lemon oil from the corresponding aldehydes and of acetic acid formed by the hydrolysis of linalyl-and geranyl acetate in lemon oil, will initiate and promote the formation of *p*-cymene.

The other mischief maker in the deterioration in both lemon oil and orange oil on ageing appears to be *d*-limonene, present to about 90 per cent in both essential oils. According to Blumann and Zeitschel *d*-limonene on contact with moist air very readily auto-oxidizes with the formation of carvone and carveol.

The question arises why the third widely used citrus oil, namely, bergamot oil, keeps so well on ageing. Bergamot oil contains no citral and the content of limonene is comparatively very low. On the other hand, bergamot oil contains 34 to 38 per cent linalyl acetate, 6 to 14 per cent free linalol, appreciable amounts of nerol and bisabolene (the latter being a monocyclic sesquiterpene), and up to 5 per cent of an odorless crystalline body called bergaptene, which has been identified as the monomethylether of dihydroxy-coumarin. These components, making up more than 50 per cent of bergamot oil have a considerable stabilizing effect, all the more since bergamot oil apparently contains no aldehydes.

In view of the chemical reasons for the deterioration of lemon oil and orange oil, Strausz strongly recommends that these oils, before storing, should be dried by contact with powdered anhydrous magnesium sulphate, and that they should best be stored in tightly stoppered glass containers, filled up to the neck, at temperatures between +5 and +10°C. in order to prevent resinification of the terpenes. A similar precautionary measure with large amounts of peppermint oil, where, in spite of the high content of menthol and its esters the resinification of the terpenes spoils the flavor on ageing, has given very satisfactory results.

Additional Official Specifications for Essential Oils

Two years ago, the Scientific Section of the Essential Oils Association of U. S. A. set up standards and specifications for Brazilian rosewood oil; petitgrain oil, Paraguayan, spike lavender oil, and hydroxy-citronellol. Subsequently, official specifications were established for lemongrass oil, terpineol, terpinyl acetate, and heliotropin. During the past year, the progress of the committee continued and specifications for eight additional essential oils and aromatic chemicals were developed. These were accepted and made official during January, 1948. The new specifications cover: copaiba oil; geranyl acetate; oil of citronella, Ceylon; oil of ginger; citronella oil, Java type; citral pure; geraniol; and citronellol. As in the past, these specifications include pertinent technical notes and structural formulas, other general names, preparation, physical and chemical constants, descriptive characteristics, special tests where required, and information on containers and storage.

Chemical Flavoring Agents

In a talk at the conference on Western Chemical Markets, P. Lloyd (*Chem. Ind.* 61:804, 1947) elucidated the relationship between the chemical industry and the food industry. He stated that a great variety of chemical substances are employed in connection with the production, processing, preservation and distribution of foods. A major group is that of food flavors. In the broad sense, these compounds are probably the most important items employed because they aid in developing and imparting characteristic taste to food and beverages. Of the various chemical flavoring materials, one of the most important is the sodium salt of glutamic acid. From limited information received from the industry it is estimated that approximately 500,000 pounds are used annually, valued under prevailing market conditions at about one dollar per pound. Other synthetic fruit chemical flavoring agents used are:

Fruit Flavor	*Compound*
Pineapple	Ethyl butyrate
Pear	Propyl acetate
Jargonelle pear	Amyl acetate
Apple	Isoamyl isovalerate
Apricots	Isoamyl butyrate plus Isoamyl alcohol
Almond	Benzaldehyde
Strawberry	Ethylacerate plus amyl acetate
Cinnamon	Cinnamic aldehyde
Grape	Methyl anthranilate

In addition to those enumerated above, innumerable essential oils are important to the food industry.

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1941 Industrial synthesis.
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B6 — PYRIDOXINE
1938 Isolation completed.
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1934 Pilot plant started.
1936 Large industrial production.
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E — α - tocopherol
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Abreast of the Markets

A Dull Market Continued To Prevail in Essential Oils. Currency Revaluation Tended to Depress Some Values.

In general, the essential oils were in slow demand. Supplies of nearly all of them, with the exception of dill and the Russian oils, were at good levels, but high prices and the uncertainty prevailing regarding the future business trend tended to depress the market.

A brisk demand for aromatics, particularly from the soap trade, characterized this market. The supply of most of the important aromatic chemicals seemed adequate with the exception of products made from meta-cresol, namely musk ambrette and thymol. With this coal-tar raw material almost impossible to obtain, and with little or no hope in sight, the dearth of these two substances remains the most serious scarcity in the aromatics field.

Other synthetics that are by no means in plentiful supply include vanillin, terpineol, amyl salicylate, nerolin, and amyl cinnamic aldehyde.

Certain occurrences have tended to disturb the essential oil market somewhat. Revaluation of the Italian lira followed by that of the franc has greatly confused the price trends of materials originating in Italy, France and the French Colonial Empire. The effect has been to generally depress values in items from such sources and to outweigh other factors which would have created a bullish tendency. Uncertainty regarding the forthcoming elections in Italy also contributed to the unsettlement prevailing in this market, with all raw materials originating in Russia and the satellite nations coming under special observation.

Imports of essential oils amounted to 647,296 pounds in December, 15 percent under the 757,014 pounds arriving in the preceding month.

The year ended with 1947 oil imports aggregating 6,238,966 pounds, a decrease of 22 per cent from tonnage arrivals amounting to 8,019,383 pounds in the preceding year.

Of the 44 specified oils tabulated in this report each month by the Department of Commerce, 30 represented decreases and 14 increased in import tonnage for the full year of 1947 compared with 1946.

Lemongrass Oil Down

The inside price for oil lemongrass dropped form $1.50 to $1.45 during the current trading period, while the outside remained unchanged at $2.30. It was stated that buyers could obtain all the oil they wanted at this time although there was some doubt as to what might be available in the future.

The government of Travancore, India, is planning to establish a 20 acre lemongrass breeding station in North Travancore, India. A trained botanist will be in charge of the station, which is to be under the control of the Central Research Institute, Trivandrum.

Lemongrass ordinarily grown in Travancore reportedly has only about 77 per cent citral content, although higher percentages (even 84 per cent) are found. The object of the plan is to evolve, by selection and hybridization, superior varieties of lemongrass with a higher citral content than the present average. Cropping, distillation, the best cycle of cultivation, and the design of still are also to be studied.

Bois de Rose Firm

Brazilian Bois de Rose was reported in good supply on the New York market, although the demand for it was not up high enough to absorb all the offerings. The inside of the price range remained firm at $2.85, with the outside at $4.00 to $4.75 as to seller.

Brazil's exports of Bois de Rose in the third quarter of 1947 amounted to only 46 metric tons, valued at 4,781,000 cruzeiros, compared with 100 metric tons, valued at 17,604,000 cruzeiros, in the comparable period of 1946. In the 1947 period, the entire quantity went to the United States, whereas in the 1946 period the United States took 83 per cent.

• Prices quoted in this section were current on the first of this month,

Bergamot Down

Supplies of oil of bergamot were at good levels during the period under review. Demand was reported as only fair, and this undoubtedly accounted for the fact that spot prices were generally reduced by 75c per pound to a new range of from $4.00 to $6.00 per pound. Future supplies of Italian Bergamot oil will largely depend on the political trend in southern Europe during the next few weeks.

Oil Exports, Reunion Island

Exports of geranium oil from Reunion Island during the first 11 months of 1947 totaled 40,400 kilograms. Destinations were as follows: France, 24,600 kilograms; Madagascar, 1,500 kilograms; England, 3,600 kilograms, and the United States, 10,700 kilograms.

Total exports of oil of vetiver from Reunion Island during the first 11 months of 1947 amounted to 9,200 kilograms. These shipments went to the following countries: France, 8,200 kilograms; United States, 800 kilograms; England, 200 kilograms; South Africa, a small quantity, with a value of 10,000 francs.

Ylang-ylang oil exported totaled more than 500 kilograms, valued at 719,000 francs. Most of these exports went to France; a small amount went to South Africa.

Essential Oil Exports, Paraguay

Declared exports of petitgrain oil from Paraguay to the United States during 1947 amounted to 71,541 kilograms, valued at $404,178, compared with 83,468 kilograms, valued at $518,-158, in the preceding year. December 1947 exports totaled 23,434 kilograms, valued at $139,952, as compared with 11,127 kilograms, valued at $60,535, in December 1946.

Paraguay's declared exports of guaiacwood oil to the United States in 1947 amounted to 3,260 kilograms, valued at $12,693, compared with 3,600 kilograms, valued at $16,316, in the preceding year. There were no exports in December 1947, whereas in the corresponding month of 1946, such exports amounted to 480 kilograms, valued at $2,010.

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International Supplies of Fats and Oils Twenty Percent Below Prewar. Situation May Continue Unfavorable.

Present acute world shortages of fats and oils are due largely to the reduced exports to deficit areas from the former surplus-producing nations of the Far East and Africa. International supplies are about 20 per cent below prewar.

Current indications are that exportable supplies of fats and oils will not improve, and may possibly decline, during 1948. The aggregate international fats and oils situation this year may be as unfavorable as for any of the past 3 years, even though Europe is likely to increase its oilseed output by a fair margin over last year.

Total world supplies of visible fats in 1947 have been estimated at around 18,000,000 short tons—a figure which is slightly higher than the 1946 estimate of 17,700,000 tons) but much reduced from the 1935-39 average of 21,000,000 tons. World net export trade amounted to about 4,000,000 tons last year, an increase of 1,000,000 tons over 1946 largely accounted for by the gains in exports from the Philippines. However, exports in general still are 40 per cent under the prewar level.

Europe's continuing under-production is another principal cause of world shortage; other causes are: greatly increased world demand due to larger populations, and augmented industrial consumption of fats and oils.

During 1948 careful judgment will be required to balance supplies with real needs, internationally. The supply this year and in 1949 may not be built up to the point of satisfying total potential demand even under the most favorable circumstances. The best that is looked for is a relative improvement and an eventual gradual return to normality in fats and oils production and trading policies throughout the world.

Production and Exports of Locust Bean Gum

Commercial production of water soluble locust gum (Carob Gum) in Spain is an industry only 12 to 14 years old. Locust bean gum is derived from the seed of carob or algarroba, which is indigenous to the countries bordering the Mediterranean Sea.

Spain's annual production of locust bean pods amounts to 564,000 metric tons, of which almost half is produced in the Province of Valencia. The quantity of beans contained in the pods varies but is said to average 9 per cent. As the pods from which the beans are not extracted are principally used as a fodder for livestock, more than 90 per cent of the seeds are lost for processing. Less than 5 per cent is extracted from the pods for industrial use.

Only one factory in Spain, located at Valencia and operating since 1941, is engaged in the production of locust bean gum. Annual productive capacity requires a supply of 10,000 tons of raw locust beans.

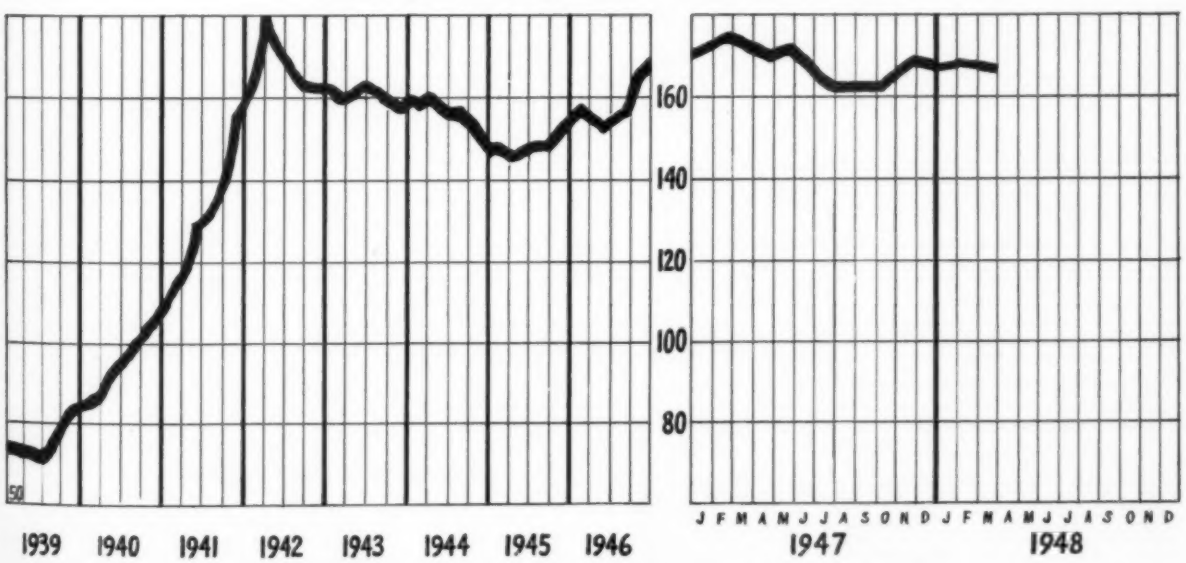
Present production of gum after domestic needs are filled, provides an exportable surplus of 2,000 metric tons. Of secondary importance is the factory's concurrent output of nutritious yellow protein flour used for enriching foods and pharmaceutical products. Locust bean gum is also used in various cosmetic preparations and as pill excipient in the pharmaceutical industry.

Estimates place Spain's consumption of its own locust beans for industrial purposes at 2,500 to 3,000 metric tons. Spain also imports locust beans, chiefly from Portugal and Cyprus. In 1946, domestic consumption of locust bean gum totaled 1,000 metric tons, or 30 per cent of output.

Official Spanish statistics give no separate break-down for exports of locust bean gum. According to the sole manufacturer, exports of this product, amounting to 2,000 metric tons during 1946, were divided as follows: United States, 500; Italy, 300; France, 200; Sweden, 200; Belgium, 150; England, 100; The Netherlands, 100; Switzerland, 50; Argentina, 50; Brazil, 50; and others, 300.

During 1943, Spanish exporters sold locust bean gum at $1.15 to $1.25 per pound, f.o.b. Valencia. Resumption of competition from Cyprus in 1944 caused a sharp decline. Current quotations from Valencia, varying between $0.40 and $0.50 per pound, f.o.b. Valencia. Any further reduction in the price of Spanish locust bean gum is not expected, even under pressure of competition from other producing areas.

50 Raw Materials—Weighted Price Index. 1926=100.



The price index of fifty commodities for March declined from 167.8 to 166.4.

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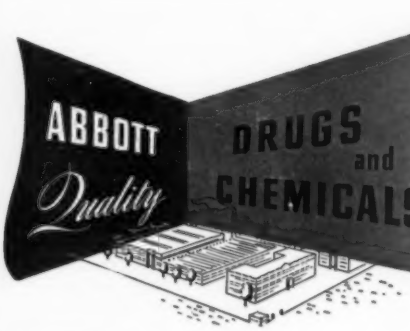

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Bergamot Oil 75c
Camphor Natural 20c
Cantharides Chinese 20c
Carnauba Wax No. 1 6c
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Eucalyptol 5c
Ginger Oil $1.25.
Henbane Leaves 10c
Ipecac Root 50c
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Lemon Grass Oil 10c
Lime Oil Expressed $2
Malva Flowers Blue 5c
Mandarin Oil 75c
Menthol Natural 25c
Myrrh Gum 10c
Nutmeg Oil 25c
Origanum Oil 70c
Papain Pure Powd. 25c
Patchouli Oil $2.50
Pimento Leaf Oil 10c
Rhubarb Root HC 8c
Saffron American 5c
Valerian Root 8c
Vetivert Oil Java $5
White Pine Bark Rossed 4c

The powdered gum is exported from Spain in double jute bags, with a net weight of 50 kilograms.

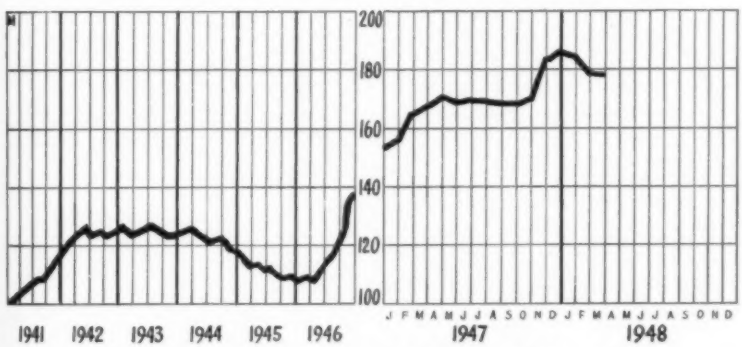
Apart from export licenses required for all exports from Spain, there are no Spanish Government restrictions on shipments of locust bean gum to foreign destinations.

Menthol Down

After the recent reduction of 25c per pound in the spot market for natural menthol, the undertone seemed at least steadier if not actually firmer. Spot quotations and primary market replacement costs became more solidified despite the fact that no great amount of trading in spot supplies was noted. Holdings now unsold on spot were believed to be of substantial size and much of the merchandise showed a first cost in excess of present replacement quotations.

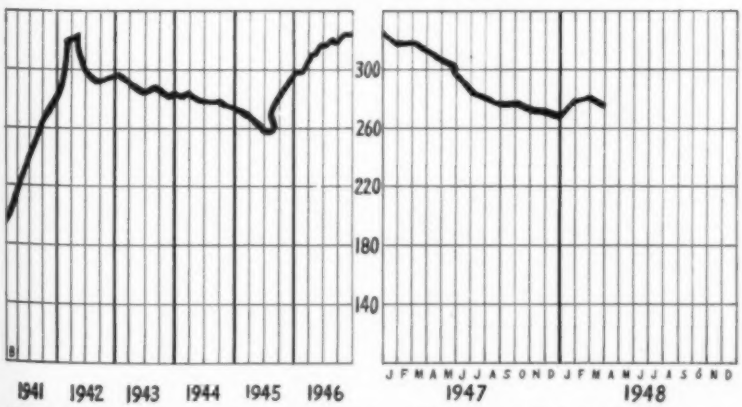
Brazil's exports of menthol during the third quarter of 1947 amounted to 65 metric tons, valued at 18,756,000 cruzeiros, of which the United States share was 18 metric tons, valued at 4,819,000 cruzeiros. In the third quarter of 1946, exports of menthol totaled 131 metric tons, valued at 32,484,000 cruzeiros, the United States taking 80 metric tons, valued at 22,517,000 cruzeiros.

15 Medicinal Chemicals—Weighted Price Index. 1926=100.



The medicinal chemicals index declined from 179.7 to 179.4. Menthol dropped in price.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index declined from 288.4 to 283.2. Agar, Balsam Tolu, Ipecac, and Rhubarb were lower.

Coriander Scarce

Oil of Coriander continued extremely scarce in the spot market. It was hoped that some offerings might be made in the Fall from European sources, but this was merely wishful thinking and was little calculated to relieve the acute shortage that was being felt at the present time. There were still no offerings from Russia and the supplies in this country were at an extreme low. Only a few dealers had any stocks whatever and they parceled it out to the trade in small quantities in an endeavor to spread it among their customers in an equitable manner. The inside price range continued at $34 but the outside advanced to $37.50. This advance meant nothing to prospective consumers who were interested only in obtaining some of the oil.

Citronella Firm

Both Ceylon and Java citronella were firm as to price during the current trading period. Both oils were in ample supply and the demand was good. The Ceylon product ranged in price from 90c to $2.75 and the Java oil was quoted at from $1.40 on the inside with uncertainty prevailing as to the actual outside range.

It was still difficult to obtain reliable information on the production of the oil in Java. Crops had been curtailed by war and many of the fields destroyed. The most reliable information indicated that the island was getting back into production on a slow but sure basis, although conditions there had not yet reached prewar standards. Also in the picture was the switch the farmers had been forced to make from the cultivation of citronella to the planting of foodstuffs, which were necessary to help relieve the acute shortage of food.

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Vanilla Firm

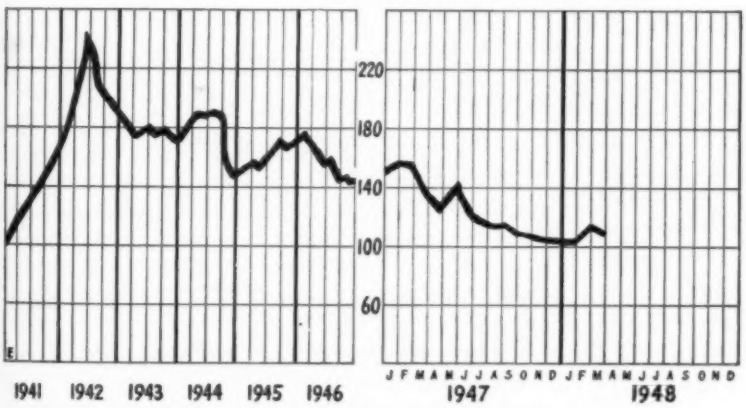
Sellers of vanilla beans took a very firm view on prices based on the general situation prevailing in the primary markets. The foreign exchange developments in France have not reduced the import cost of vanilla brought here from the French islands, a fact that alone would be more than sufficient to support the current price structure. Mexican beans should be arriving in fairly substantial quantities during the weeks immediately ahead.

The Government General of Madagascar is considering means of stabilizing the vanilla-bean export market, which has tended to become unsteady because of rumors abroad that great stocks of vanilla allegedly accumulated during the wartime period were to be placed on the market. The Service de L'Agriculture of Madagascar states, however, that there are only about 200 tons of wartime vanilla beans in local warehouses—all decomposed and unfit for export. Vanilla, chiefly exported to the United States, is Madagascar's first export commodity in point both of value and income to the Government.

The Madagascar government has two possible solutions of the vanilla market question. The first is that the government might announce that the prices fixed for the export of vanilla in 1948 (from the 1947 crop) will continue unchanged throughout 1949 and 1950 (for the 1948 and 1949 crops), to allay fears of vanilla importers concerning imminent changes in price, and the second, the government might buy up and destroy the inferior wartime stocks, reassure importers that vanilla exports will thereafter be dependent entirely on current crops, and announce that after the end of this year, when the 1947 crop has been exported, the vanilla market will be free (no price fixing by the French Government).

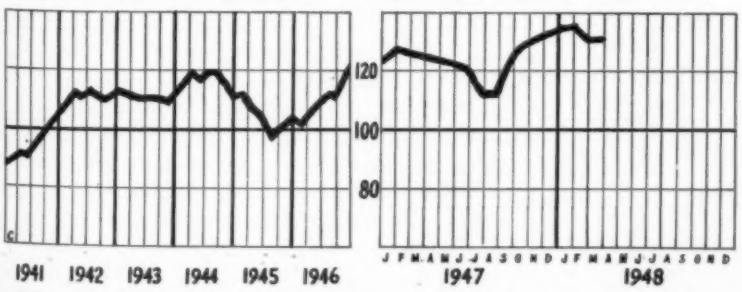
The second solution is favored by the Madagascar Service de l'Agriculture as being more practicable and more capable of restoring the market to its normal prewar status. In any event, the Government realizes that some decision should be made within the next few months. It is likely that the Government will sound out the opinions of the vanilla growers before taking a definite step, possibly by April.

15 Essential Oils—Weighted Price Index. 1926=100.



The essential oils index declined from 115.0 to 112.1. Anise, Bergamot, and Limes were lower.

25 Cosmetic Raw Materials—Unweighted Price Index. 1926=100.



The cosmetic raw materials index advanced fractionally from 132.4 to 132.7.

Large Peppermint Production Expected This Year

Prices for peppermint oil continued without change during the trading period under review, the market being strengthened by continued demand from consuming channels. The primary market reported that the largest production of peppermint oil in history may be harvested this year as the result of the high prices which have prevailed for several years and the fact that the market has been supported at these levels by large users. Peppermint is an extremely profitable crop at present price levels and this may result in a tremendous overproduction this year, according to certain factors in on the West Coast.

The Department of Agriculture reported that most of the peppermint fields in the State of Washington appear to have wintered well. Good supplies of soil moisture last Fall and throughout the Winter have been favorable, it was stated. Growers are plowing and dividing mint fields as ground dries to working consistency. The comment was made by the department on conditions as of March 15.

Dill Oils Scarce

Last year's predictions of short stocks and continually rising prices for both dillseed and dillweed oils have been fully confirmed. Stocks are very meager both on spot and in the hands of distillers. Those who did not protect their requirements are likely to pay materially higher prices until such time as a new crop becomes available late this year.

Producers on the West Coast advise that there is practically no carryover stocks from the last crop and that it is problematical as to just how much dill will be planted as growers hesitate to risk a crop until they have contracts in advance. It is also reported that if contracts are available that part of the country can produce all the dill oil necessary to meet requirements.

Petitgrain and Guaiacwood Oils

Declared exports of petitgrain oil from Paraguay to the United States during January 1948 totaled 11,065 kilograms valued at $66,390, as compared with 10,257 kilograms valued at $55,576 in the corresponding period of the preceding year.

There were no declared exports of guaiacwood oil from Paraguay to the United States during January 1948; such exports in the like month of 1946 totaled 660 kilograms valued at $2,744.

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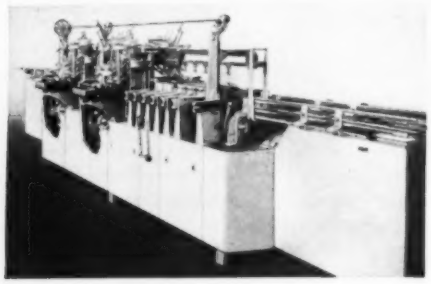

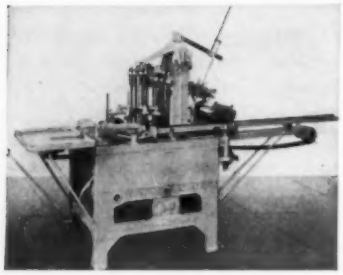

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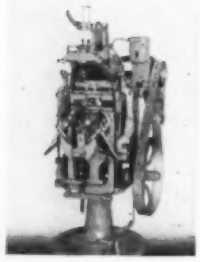

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Newer Treatment for Fungus Infections

(*Continued from page 543*)

it is therefore useless to treat it with a fungicide. The latter must be used to eradicate the heart of the infection.

Dermatologists have learned to their chagrin that "easy does it" must be the rule in treating fungus infections, as overtreatment is the cause of more grief than the dermatophytoses themselves. Fatty acid treatment takes a hint from nature by employing the physiological fungicides in human sweat in the defense of the skin against fungus and bacterial infection.

Chest Rubs and Analgesic Balms

(*Continued from page 473*)

tion to the usual active agents. One such analgesic ointment, reported[6] to be especially useful for arthritic patients contains a small proportion of acetyl-beta-methylcholine chloride, plus menthol, thymol, eucalyptol and methyl salicylate, in an emollient base. Another analgesic unction, found useful in treating arthritic and rheumatic disorders,[7,8,9] contains histamine and acetyl-glycol-salicylic ester, together with standard rubefacients in an emulsion base. However, these special ingredients are much more potent than the usual agents. Hence ointments containing them are generally used under medical supervision.

Much has been said during recent years concerning the influence of the ointment bases or vehicles on the availability of medicaments to the skin.[10,11,12] No attempt will be made in this review to discuss the merits or demerits of the several types of bases used to make rubs and balms. Nonetheless, observations made by Beutner and his associates are pertinent and are worth citing. Working with representative bases, these investigators found that the type of ointment used had very little influence upon the amount of methyl salicylate absorbed after inunction of the preparations.

Many types of materials are used as bases for chest rubs and analgesic balms. These include the old fashioned fatty bases as well as cold creams, petrolatum, petrolatum-lanolin mixtures, lanolin and a number of more modern vanishing type bases. While the current trend seems to be toward the use of more elegant preparation which show less soiling and staining tendencies, many recognized and popular products continue to employ petrolatum, lanolin and the like as vehicles for the rubefacients.

The type of base employed for rubs and balms provides a convenient way of classifying these products. It also gives a means for a more orderly discussion of their formulation. Here again, there is no fixed line of demarcation because the materials of one group may be used in conjunction with those of another.

The earliest rubifacient counterirritant salves or ointments employed bases consisting chiefly of fats

like lard or goose grease. Vegetable oils were occasionally added to regulate the hardness or improve the spreading properties. Many of the older folks still feel that such fatty materials yield better results than those obtained with new type ointments. Thus, a typical old fashioned chest rub can be made from:[14]

Benzoated Lard	**400 parts**
Olive oil	**100 "**
Mace oil	**36 "**
Eucalyptus oil	**10 "**
Tincture of benzoin	**15 "**

Such vehicles do not find much use today, but sometimes the fatty bases are combined with other more modern materials. For example, a chest rub which combines the old and the new may consist of:[14]

Goose grease	**500 parts**
Lanolin	**200 "**
Petrolatum	**200 "**
Camphor	**25 "**
Oil of turpentine	**50 "**
Oil of lavender	**15 "**

Quite different is an antineuralgic ointment for application to the painful parts.[15] This consists of:

Chloral hydrate	**10 parts**
Menthol	**10 "**
Cocoa butter	**40 "**
Spermaceti	**20 "**

Illustrative of how an old fashioned fatty preparation has been modernized is an anodyne ointment containing guaiacol plus other active agents:[16]

Camphor	**4.0 Gm.**
Guaiacol	**1.0 "**
Methyl salicylate	**3.0 cc.**
Sulfated hydrogenated castor oil, to make	**60.0 Gm.**

Quite similar to this product is a proprietary counter-irritant ointment containing guaiacol, methyl salicylate, camphor, menthol and oil of Siberian pine needles in a wool fat and petrolatum base.

Cold cream, alone or in combination with other vehicle materials, is quite frequently used as a base in making rubs and balms. For example, an analgesic ointment, recommended[17] for use in the local treatment of neuralgia, consists of:

Camphor	**4.0 Gm.**
Chloral hydrate	**4.0 "**
Rose water ointment, U.S.P.	**30.0 "**

Employing powdered mustard as the active counter-irritant is a chest rub compound of:[14]

Cold cream	**600 parts**
Lanolin	**200 "**
Pulverized mustard	**200 "**

Somewhat similar with respect to the base is an

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improved analgesic balm suggested by Belanger.[18] His formula and procedure is as follows:

Lanolin, anhydrous	**2**	**lb.**
Petrolatum	**13**	**oz.**
White beeswax	**10**	**oz.**
Water	**10**	**fl. oz.**
Borax	**¼**	**oz.**
Menthol	**1**	**oz.**
Methyl salicylate	**4**	**fl. oz.**
Oil of mustard artificial	**¼**	**oz.**
Capsicum oleoresin	**15**	**gr.**

Melt the beeswax on a water-bath, add the lanolin and petrolatum and mix with continued heating. Separately dissolve the borax in the water with the aid of heat. Pour this solution into the wax-lanolin mixture, stirring until a perfect combination is formed. Remove from the heat and add the menthol. Stir until the product begins to thicken, then add the methyl salicylate and the capsicum oleoresin which has been rubbed up with the mustard oil. Mix well and fill into tubes while still warm.

Petrolatum sometimes modified with wax or oil, finds frequent use as a base, particularly in the production of chest rubs. Quite illustrative is the following chest rub formula:[14]

Petrolatum, white	**400**	**parts.**
Mineral oil, heavy	**200**	**"**
Eucalyptus oil	**50**	**"**
Menthol	**10**	**"**
Oil of turpentine	**10**	**"**

Containing a larger number of active agents to yield a somewhat more rounded vapor type chest salve or rub is another formula suggested by Belanger:[18]

Gum camphor	**6**	**oz.**
Menthol	**8**	**"**
Methyl salicylate	**6**	**"**
Eucalyptus oil	**10**	**"**
Cajeput oil	**10**	**"**
Turpentine	**8**	**"**
Paraffin	**1½**	**lb.**
Petrolatum, white or yellow	**16**	**lbs**

A smooth, easy-spreading chest rub may be obtained with the following combination:[19]

Petrolatum	**200**	**parts**
Mineral oil, light	**300**	**"**
Spermaceti	**100**	**"**
Stearic acid	**40**	**"**
Menthol	**10**	**"**
Camphor	**10**	**"**
Eucalyptol	**40**	**"**

A number of chest rubs and analgesic balms are compounded with bases made with mixtures of petrolatum and lanolin. A quite simple mustard cream listed by Goodman,[20] which is useful as a counter-irritant rub, contains:

Mustard powder	20	parts
Liquid petrolatum	4	"
Lanolin, anhydrous	24	"
Petrolatum, to make	100	"

Make a paste of the mustard powder and the liquid petrolatum, incorporate the lanolin and finally mix in the required amount of petrolatum.

Equally simple is an analgesic balm prepared from:[21]

Menthol	5.0
Methyl salicylate	10.0
Lanolin	75.0
Petrolatum, white	10.0

Another modification, recommended by Rasmuson[22] when an analgesic ointment for massage is needed in connection with physiotherapy, consists of:

Camphor	12	per cent
Menthol	12	" "
Methyl salicylate	10	" "
Lanolin	33	" "
Petrolatum	33	" "

As is well known, combinations of lanolin and petrolatum are used in the production of absorption bases, which are capable of taking up considerable quantities of water. This property may be used to make water-containing analgesic ointments that are smooth, creamy and easy to apply. Such a preparation is illustrated in the following analgesic balm[19, 21] which, in addition to the standard active ingredients, also contains ethyl aminobenzoate as a local anesthetic:

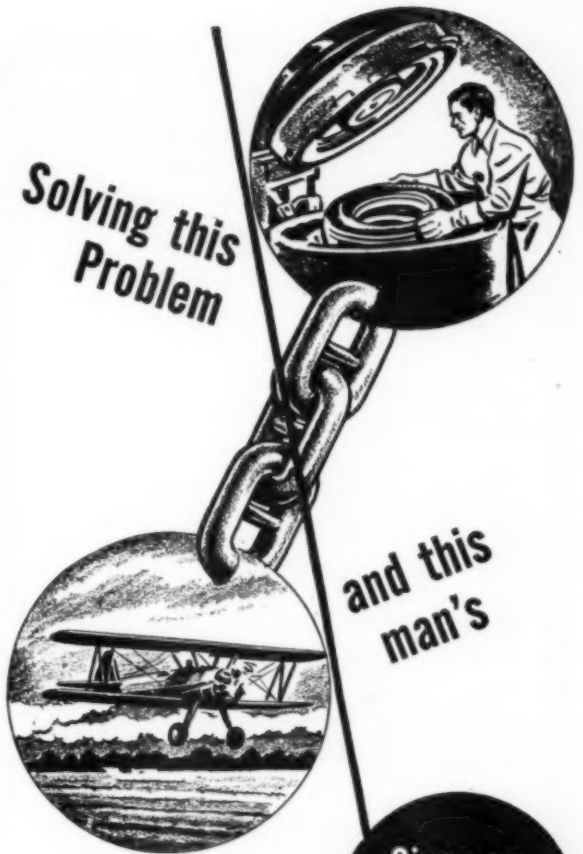
Lanolin, anhydrous	45.0
Petrolatum, yellow	25.0
Menthol	2.0
Ethyl aminobenzoate	2.5
Methyl salicylate	7.5
Water, distilled	18.0

Triturate the ethyl aminobenzoate with a portion of the petrolatum until smooth. Gradually add the remainder of the petrolatum and the lanolin. Dissolve the menthol in the methyl salicylate and add the solution to the previous mixture, triturating until thoroughly mixed. Finally add the water and mix until homogeneous. Fill into tubes or jars.

Lanolin, by itself, is very extensively used as a vehicle for rubefacient drugs. Indeed, several of the best known proprietary analgesic balms are formulated with lanolin bases. Lanolin has a reputation for its ability to facilitate absorption and to promote good local and systemic effects. Thus, in their studies on the absorption of methyl salicylate by inunction, Beutner and his associates[4] employed the following analgesic ointment as a representative preparation:

Lanolin	60	per cent
Menthol	20	" "
Methyl salicylate	20	" "

A similar, milder analgesic balm, found[17] useful in



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WHITTAKER

KOMMON SCENTS!

Most widely discussed topics of the day are politics and The Kinsey Report. There are some cynics, of course, who insist there's no difference.

•

If nothing else, the Kinsey Report has provided the movie industry with a successful piece of literature that defies screen adaptation.

•

It's really a pity, too, since so many title changes have been suggested. Most printable is, "Sex Life With Father."

•

"The Report" has made more readers out of disinterested people than any book since "Psychopathia Sexualis," which did more to popularize Latin than anything since Horace, Virgil and Cicero.

•

Both books synthesize the cliches: "Sex Is Here To Stay" but "It will Never Replace The Horse."

•

Peculiar thing about human beings. As children we're considered delinquent for writing four-letter words on back fences. But as adults, we're "sophisticated" for reading the same words in a James T. Farrell novel.

•

Story we like best on The Kinsey Report concerns the pampering mother who was alarmed then appeased to learn that her daughter wasn't reading advertising matter on the whiskey of the same name.

•

The Cosmetic Industry, of course, takes The Kinsey Report in stride. Even in conservative quarters it merely confirms the suspicion that the Stork Club isn't really a maternity center.

George Fiedler

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treating chilblains and other conditions, may be prepared from:

Menthol	**1.0 Gm.**
Methyl salicylate	**2.0 cc.**
Lanolin	**30.0 Gm.**

Various combinations of menthol, chloral hydrate and comphor in lanolin are frequently suggested for making analgesic balms. One preparation which appears to be especially well recommended,[23, 24] is as follows:

Menthol	**1.0**	**parts**
Chloral hydrate	**4.0**	"
Camphor	**4.0**	"
Lanolin, to make	**60.0**	"

Another analgesic balm with a lanolin base, recommended,[17] in the local treatment of neuralgia, is composed of:

Methyl salicylate	**0.6**	**parts**
Guaiacol	**1.0**	"
Menthol	**1.6**	"
Lanolin, to make	**30.0**	"

Sometimes the lanolin base is stiffened or made firmer by the addition of wax. Such a combination is illustrated in Compound Menthol Ointment, N. F. VIII, which contains menthol, methyl salicylate, white wax and lanolin. A somewhat more complicated product, a compound methyl salicylate ointment proposed some years ago for inclusion in the British Pharmacopoeia, is made from:[25]

Methyl salicylate	**50.0**	**Gm.**
Menthol	**10.0**	"
Encalyptol	**2.5**	"
Oil of cajeput	**2.5**	"
White beeswax	**20.0**	"
Hydrous wool fat (lanolin)	**15.0**	"

Up to this point consideration has been given only to chest rubs and analgesic balms made with fatty bases, which leave a greasy film on the skin. Many well-known commercial products are formulated with such bases and many people do not object to their use. Indeed, there are those who rather expect that such items will have a fatty feel and who believe that these rubs and balms are more effective. Nonetheless, more and more manufacturers are putting our products with bases that are stainless or greaseless or both. In some cases, well-known rubs or balms have been modified to permit claims of nonstaining properties.

Although there are a number of bases which would be suitable for making greaseless analgesic balms, the method given by Belanger[18] is very illustrative.

Stearic acid, double pressed	**60**	**oz.**
Glycerine	**40**	**fl. oz.**
White mineral oil	**20**	**fl. oz.**
Water	**276**	**fl. oz.**
Ammonia, 26°	**6**	**fl. oz.**

Menthol	3	oz.
Methylsalicylate	12	fl. oz.
Oil of mustard, artificial	½	oz.
Capsicum leooresin	30	gr.

Melt the stearic acid. Heat the water to 160°F. and add the ammonia. Pour this solution into the melted stearic acid and stir until smooth. Stir in the glycerine and mineral oil. Remove from heat source, add the menthol and, as the product begins to thicken, add the methyl salicylate and the capsicum previously rubbed up with the oil of mustard. Mix thoroughly and fill into tubes.

If a more emollient action is desired, some lanolin or similar acting material may be added. Indicative is the following formula[14] for a chest rub:

Vanishing cream	600	parts
Lanolin	100	"
Mustard, ground	150	"
Camphor	20	"
Methyl salicylate	30	"

Also interesting and quite simple to make is a so-called rheumatic or liniment cream cited by Bennett,[19] as follows:

Avocado oil	10	parts
Methyl salicylate	15	"
Diglycol stearate	22	"
Water	60	"

Heat the stearate with the oil at 70°C. until dissolved. While mixing add the warmed methyl salicylate and then pour the mixture, with rapid stirring, into the water heated to 70° C.

This may be described as a modern version of the semi-solid liniments which have long been popular in Europe and which are known as solid opodeldocs.[15] Many varieties of solid opodeldocs are made, using a wide range of medicinal ingredients. Suitable for packing in collapsible tubes, a typical preparation may consist of:

Stearin soap	60	parts
Camphor	60	"
Alcohol (90%)	500	"
Mustard oil (essential)	15	"

This last recalls patented procedure for making counterirritant chest rubs in cake or stick form. Using a solidified alcohol solution of soap as the base, a typical mixture for making the molded products is a follows:

Menthol	4.00	parts
Camphor	8.00	"
Oil of turpentine	4.00	"
Oil of eucalyptus	2.00	"
Oil of thyme (white)	1.00	part
Alcohol	78.50	parts
Stearic acid	4.87	"
Sodium hydroxide	1.10	"
Amber dye solution	2.50	"

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What's Happened to Rose?

(Continued from page 459)

Fortunately for the sensitive noses and discriminating buyers of the perfume and cosmetic companies, this last blow to the Bulgarians did not disturb anything but their sympathies.

Otto of Rose, almost entirely a monopoly of Bulgarian soil and climate, is a basic, delightful odor. But it is no longer essential. The predominant rose note is not popular in perfumes, colognes and rarely in cosmetics. Otto of Rose, in this industry, is used, so far as perfumery and cosmetics go, almost entirely as a constituent of a perfume compound. It is useful and valuable in higher priced compounds. But thanks to chemical research here and in France and Switzerland, we can do very well without it, if we want to.

There are other uses for Otto of Rose. Snuff and tobacco require large amounts. But perfume and cosmetic manufacturers would welcome back the brands with selected, controlled qualities and characteristics, and would like to see Otto of Rose, marked by these brands, freely available again. Also, they would like to think that Bulgarians were getting the money.

Foundation Creams

(Continued from page 467)

absorb water only with good mechanical trituration. There are, therefore, advantages and disadvantages which may be pointed out in both types.

If pigments and fillers are to be incorporated into the water-in-oil types of preparations, they may be first ground into a small amount of the oils and incorporated into the emulsions along with the rest of the oils, or else ground into the cream after it is prepared. Grinding is usually done with a roller mill though ointment mills may also be used to advantage.

Formulation of foundation creams is by no means static. There are new materials becoming commercially available which suggest new ideas. The availability of esters of monohydric alcohols as a new source of low viscosity materials not subject to rancidity because of their saturated fatty acid content suggests, for example, their incorporation into a medium where a thin film is desired. Their incorporation is not easy since they are more difficult to incorporate into an emulsion than for example is mineral oil, but certainly it is possible. By their incorporation, it may therefore be possible to form a film with better properties than would otherwise be possible.

The following are several formulae which are listed to demonstrate the formulations discussed above. These are by no means represented as being the only possible answers sought, but rather as examples which may suggest further ideas.

FOUNDATION CREAM (vanishing cream type)

Stearic Acid	12.5	per cent
Glyceryl Monostearate	2.5	" "
Mineral Oil	5.0	" "
K O H	0.5	" "
Glyceryl	5.0	" "
Water	qs 100.	" "
Perf. & preservative	qs	

FOUNDATION CREAM (absorption base type)

Alcohol	20.0	per cent
Mineral Oil	10.0	" "
Sorbitan Sesquioleate	2.5	" "
Water	100.	" "
Mag. So 4	0.1	" "
Perf. & preservative	qs	

Developments in Medicinal Agents

(Continued from page 507)

is the most active of metanilamide derivatives in suppressing natural infections of *P. malariae* and in partially suppressing parasitemia with *P.* falciparum. The dosage employed was 1 to 2 grams weekly, divided into 2, 3 or 5 parts. Good suppression of *P. vivax* was observed in a limited number of tests. During the 6 month period of therapy no toxic effects were noted. Further investigations are being carried out on lower and higher doses in the different conditions. This chemical is being investigated by American Cyanamid Co.

Diramin

Granuloma inguinale, a tropical disease, is an ulcerating tumor or neoplasm made up of granulation tissue. It affects the genitals and neighboring parts of the body. The usefulness of antimonial preparations in the treat-

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ment of this condition has been established. A new antimonial has recently been developed and shows promise in the therapy of this disease. This new compound is an aqueous solution of the reaction mixture resulting from the reaction between antimony catechol and triisopropanolamine in the presence of propylene glycol. It contains 8.17 mg. of antimony per cc. and is administered in 2 cc. doses 2 to 5 times per week without untoward side reactions. Pain and local irritation were noted with intramuscular injections. A series of clinical trials have shown that this compound is a good, safe preparation for the therapy of *granuloma inguinale*. It is available for clinical trial as Diramin from Parke, Davis and Co.

Diamidines

Considerable therapeutic value in the treatment of a number of protozoal and bacterial diseases has been demonstrated by three diamidine compounds which include 4:4′-diamidino stilbene or Stilbamidine; 4:4′-diamidino-diphenoxy pentane of Pentamidine; and 4:4′-diamidino-diphenoxy propane or Propamidine. These compounds have shown a species rather than a class specificity against trypanosomes since *T. rhodesiense* and *T. congolense* infections were helped whereas *T. cruzi* infections were not. Considerable activity was exhibited against human leishmaniasis which is common to the tropics and is exceedingly dangerous. Promising effects have been noted in the therapy of human trypanosomiasis. Treatment with the diamidines of infections of surface wounds such as in burned surfaces and in wounds associated with plastic surgery showed that they possess bactericidal power against streptococci and staphylococci. Transient side effects which included flushing of the face, epigastric discomfort, rapid pulse, headache, sweating, retching and occasional vomiting were noted with doses in excess of 1 mg. per Kg. of body weight. The symptoms disappeared within half an hour and frequently failed to appear after further injections. Occasional fatalities have occurred although the compounds appear to be relatively safe.

Stilbamidine appears to be more effective than Pentamidine in leishmaniasis and more effective in the early stages of trypanosomiasis than in the later. No effect was noted in rheumatoid arthritis. Tests have also been made with Stilbamidine and Pentamidine in the treatment of multiple myeloma. Some favorable effects were noted with Stilbamidine and there appears to be some connection between the metabolic aspects of multiple myeloma and the influence of Stilbamidine. It is manufactured by May & Baker Ltd., Dagenham, England.

Histamine

Meniérès symptom complex is made up of 3 chief symptoms, vertigo, tinnitus and deafness. Many drugs have been investigated for their effectiveness in this condition but no one has been found which is ideal. Recent reports have shown that nonspecific histamine therapy is of some value.

The best results are obtained when the histamine is administered in an 0.8 per cent solution of potassium chloride. Histamine diphosphate, 2.75 mg., is dissolved in 250 cc. of the 0.8 per cent solution of potassium chloride and injected at the rate of 20 to 60 drops per minute. Physiological salt solution or 5 per cent dextrose solution may also be used as vehicles. This quantity is equivalent to 1 mg. of histamine base. The blood pressure and pulse rate should be checked frequently while administering the drug. This dosage is given for 3 to 6 days. Concurrent with this or following it a 1:10,000 solution of histamine base is subcutaneously administered in doses of 0.2 cc. increased by 0.05 cc., twice a day, up to 1.0 cc. or until the optimal dose is attained. The daily injections are continued and gradually diminished according to the patient's response. In severe cases intravenous injections may be necessary for several days. In order to prevent an attack of vertigo it may be necessary to administer histamine intravenously during the subcutaneous desensitization. Histamine has also shown some value in sudden nerve deafness.

ACS

Within recent years a new branch of medicine has emerged. It is known as geriatrics and is concerned with old age. Some years ago Bogomolets concluded that the secret of long life is buried in the body so he began to investigate this. As a result there was announced in 1946 that antireticular cytotoxic serum

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(A C S) was of value in prolonging life. Unfortunately, as with many other achievements in medicine, the publicity on this serum exaggerated its effectiveness. It will not cure cancer and all forms of arthritis as was thought. Professor Bogomolets recommended that it be used immediately after the removal of cancer tumors so as to prevent their recurrence. His statement that man should live to the age of 150 years was modified with the statement that this was possible if the serum is used when the connective tissues begin to deteriorate. It is also necessary for the person to have good food, exercise and maintain a sane way of living.

The serum is intended to stimulate the system of connective tissues, thus activating its defense against disease, increasing the resistance of tissues against infection and speeding the healing process in the development of tissue. The latter is where the serum is of benefit in cases of gastric ulcers. Thus the A C S helps to stop the degenerative processes which begin after middle life. It has also shown good results in the early states of arterial sclerosis but not in encephalitis. The serum is extracted from the blood of horses which have been injected previously with spleen cells and bone marrow of young, healthy individuals who died as a result of an accident. Experimental work on this compound has been carried out by Wyeth Inc.

Dimercaprol

Another development of war-inspired research is the use of dimercaprol or B A L (British Anti-Lewisite) in metallic toxicosis. Chemically B A L is 2, 3-dimercaptopropanol. It was employed as a decontaminating and neutralizing agent against the deadly war gas "lewisite" from which use was derived its name. This compound acts by forming a relatively nontoxic and stable compound with the metallic radical. Arsenic and other metals readily combine with thiol groups. For this reason by offering this synthetic dithiol compound there is competition between it and the dithiol-containing proteins in the tissues for the arsenic. This also applies to other metals.

Dimercaprol consequently has been found of use in arsenic, gold, mercury and cadmium poisonings as an antidote. However, it has opened a new field of endeavor in respect to gold therapy. Gold compounds have been widely recommended as preferred in rheumatoid arthritis. Unfortunately due to the toxicity of these products as a result of cumulation in the tissues they have received only limited usage. It has been suggested therefore that dimercaprol be used in conjunction with gold therapy since it causes an almost immediate reversal of toxic symptoms. If the side effects experienced with dimercaprol become too marked barbiturates may be given.

Dimercaprol (name adopted by Council on Pharmacy and Chemistry of A. M. A.) is marketed in a 10 per cent peanut oil solution as B A L-in-Oil by Hynson, Westcott and Dunning. Benzyl benzoate 20 per cent is added for stability. It is administered intramuscularly.

(To be concluded)

READERS' QUESTIONS

MOTION SICKNESS PREVENTIVES: Would you please oblige me with information for seasickness? Can you tell me the formula used by the American Air Forces for air sickness? Toronto.

While I am not aware of any specific formula used by the air force, I do know that considerable work has been reported. For example, J. L. Lilienthal, Jr., in the *Journal of Aviation Medicine* reported investigations of the effects of scopolamine hydrobromide on airsickness and concluded that this drug in doeses of 0.6 miligrams administered perorally thirty to sixty minutes before flight is a potent preventive of airsickness with insignificant side results. British work by Hill and Guest on the prevention of seasickness showed that hyoscine in a dose of 1/100 grain was the most effective drug. A review of the earlier work in this field appeared in DRUG & COSMETIC INDUSTRY 51:527, 1942.

SUN TAN OIL: I am interested in a good formula for a sun tan oil that can be easily prepared in a retail pharmacy. A formula that will act as a sun screen or filler, promote tanning and contain a slight perfume and color. Columbus.

I think the following formula will serve your purpose:

Mineral oil	42.3
Vegetable oil	44.0
Menthyl salicylate	13.0
Perfume	0.5
Color	0.1
Preservative	0.1

Of course, other types of sun screens can be used in suitable proportion to replace the menthyl salicylate.

ANTI-BACTERIAL SURFACE-ACTIVE AGENTS: Will you please send me what available information there is on "wetting agents" especially with reference to those which can be used for anti-bacterial purposes and which are harmless to tender and delicate membranes and tissues? West New York.

I presume you mean the surface active agents of the quaternary ammonium type which are now finding extensive use in the medical and sanitation fields. This is a very extensive subject and one that is impossible to cover by correspondence. However, if you wish to pursue the subject further, I would suggest that you read some of the reports which have appeared in the technical literature. I would particularly recommend that you obtain and read the booklets and other publications put out by the several manufacturers. One of these compounds has recently become official in the U.S.P. under the title "Benzalkonium Chloride." In suitable solutions this is used as a cationic detergent and surface active emollient with disinfectant properties; effective as a topical antiseptic in solutions having concentrations ranging from 1:40,000 to 1:1,000. Its disinfectant action is opposed by the anionic detergent action of ordinary soap. Dilutions of 1:1,000 may be used on the unbroken skin; 1:5,000 for denuded areas and mucous membranes of the eye or vagina; 1:20,000 for irrigation of the urinary tract.

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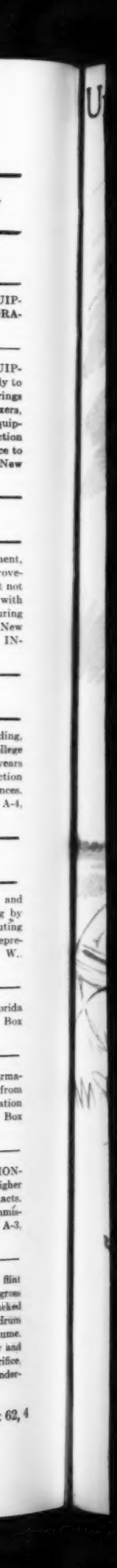
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